PRABUDDHA BHARATA

or AWAKENED INDIA

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started by Swami Vivekananda in 1896

Living a Meaningful Life in a Digital World

January 2022
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THE ROAD TO WISDOM

Swami Vivekananda on Materialism versus Idealism—II

We are not individuals yet. We are struggling towards individuality, and that is the Infinite, that is the real nature of man. He alone lives whose life is in the whole universe, and the more we concentrate our lives on limited things, the faster we go towards death. Those moments alone we live when our lives are in the universe, in others; and living this little life is death, simply death, and that is why the fear of death comes.

The fear of death can only be conquered when man realises that so long as there is one life in this universe, he is living. When he can say, "I am in everything, in everybody, I am in all lives, I am the universe," then alone comes the state of fearlessness. To talk of immortality in constantly changing things is absurd. Says an old Sanskrit philosopher: It is only the Spirit that is the individual, because it is infinite. No infinity can be divided; infinity cannot be broken into pieces. It is the same one, undivided unit for ever, and this is the individual man, the Real Man. The apparent man is merely a struggle to express, to manifest this individuality which is beyond; and evolution is not in the Spirit.

These changes which are going on—the wicked becoming good, the animal becoming man, take them in whatever way you like—are not in the Spirit. They are evolution of nature and manifestation of Spirit. Suppose there is a screen hiding you from me, in which there is a small hole through which I can see some of the faces before me, just a few faces. Now suppose the hole begins to grow larger and larger, and as it does so, more and more of the scene before me reveals itself and when at last the whole screen has disappeared, I stand face to face with you all. You did not change at all in this case; it was the hole that was evolving, and you were gradually manifesting yourselves. So it is with the Spirit. No perfection is going to be attained. You are already free and perfect.

What are these ideas of religion and God and searching for the hereafter? Why does man look for a God? Why does man, in every nation, in every state of society, want a perfect ideal somewhere, either in man, in God, or elsewhere? Because that idea is within you. It was your own heart beating and you did not know; you were mistaking it for something external. It is the God within your own self that is propelling you to seek for Him, to realise Him.

From *The Complete Works of Swami Vivekananda*, (Kolkata: Advaita Ashrama, 2016), 2. 79-80.

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PRABUDDHA BHARATA

Living a Meaningful Life in a Digital World

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This Special Issue

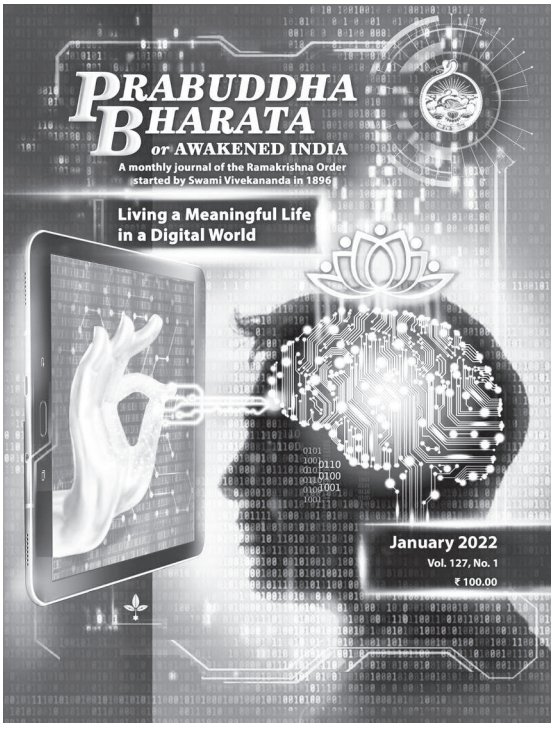
This special issue is devoted to the theme '*Living a meaningful life in a digital world*'. The world we live in is no longer termed as an organic world but as the digital world. This is due to the overwhelming influence that digital and communication technology is exerting on human beings. In this special issue, an attempt has been made to analyse the pros and cons of the digital revolution including that of Artificial Intelligence (AI) and find solutions to various kinds of problems and challenges that humanity in general and individuals, in particular, are facing today due to this new phenomenon in the human history.

This topic is a multidisciplinary theme covering a variety of areas of human interests including Spirituality, Philosophy, Psychology, Science and Technology, Sociology, Work Ethics, and the like. Several eminent authors including monks of the Ramakrishna order, scholars, academicians, technocrats, professionals, and young people working in the digital atmosphere have shared their knowledge and experience in dealing with the present scenario to find ways to lead a fruitful and enriched life by adapting eternal values of spirituality, especially Vedanta. The articles presented here are not only of academic interest but also give an illuminating understanding of how to adopt spiritual and ethical values in the digital way of life we are living today.

Artist's Perception behind Cover Page Artwork:

The golden hand is of The Almighty. Man is in the mortal world which comes under the realm of Maya. The Almighty has full access to both worlds; so whenever need be, He enters in the world of Maya and unlocks the key for the upliftment of mankind. Thus, He frees one's mind from bondage and takes one to realisation, making one unchangeable, into permanent Gold, just like Him. For this purpose, He uses today's contemporary medium. In the ancient times, the medium for transmission was speech, then it turned to script, and now, audio visual, virtual, and augmented reality. This chain of different mediums of transmission will be continuing on and on, but the real 'Meaning of Life' will remain eternal (*Sanātana*).

— *Sudhir Mirage*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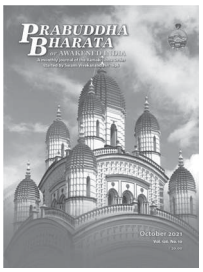

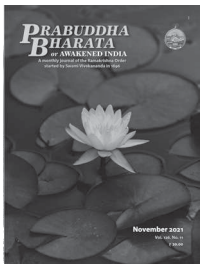

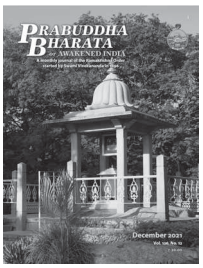

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January 2022
Vol. 127, No. 1

श्रीमच्छङ्कराचार्यविरचित साधनपञ्चकं

Five Verses on Vedanta Practice by Sri Shankaracharya

वेदो नित्यमधीयतां तदुदितं कर्म स्वनुष्ठीयतां
तेनेशस्य विधीयतामपचितिः काम्ये मतिस्त्यज्यताम् ।
पापौघः परिधूयतां भवसुखे दोषोऽनुसन्धीयता-
मात्मेच्छा व्यवसीयतां निजगृहात्तूर्णं विनिर्गम्यताम् ॥ १ ॥

Pursue the study of the scriptures like Vedas regularly. Perform your duties as prescribed in the scriptures. Worship the Supreme Lord, through these actions, dedicating all of them to Him. Give up your ambition to accumulate the objects of desire. Put an end to the constant flow of sins. Always contemplate on the blemishes in pleasures of the world. Develop intense aspiration for the attainment of Atman. Come out of your attachment towards the family and the like that belong to you as soon as possible.

सङ्गः सत्सु विधीयतां भगवतो भक्तिर्दृढाऽऽधीयतां
शान्त्यादिः परिचीयतां दृढतरं कर्माशु सन्त्यज्यताम् ।
सद्विद्वानुपसृप्यतां प्रतिदिनं तत्पादुका सेव्यतां
ब्रह्मैकाक्षरमर्थ्यतां श्रुतिशिरोवाक्यं समाकर्ण्यताम् ॥ २ ॥

Always seek the company of holy men. Strive hard so that your devotion towards the Supreme Lord becomes steady and strong. Develop virtues like tranquillity, sense-control, and the like. Renounce completely the actions instigated by desires with a firm mind. Approach the highly learned scholars and serve them with devotion (literal meaning: worship their sandals). Request them to teach you the knowledge of Brahman, the one imperishable entity without a second. Attentively listen to the Upanishadic sentences taught by them.

वाक्यार्थश्च विचार्यतां श्रुतिशिरःपक्षः समाश्रीयतां
दुस्तर्कात्सुविरम्यतां श्रुतिमतस्तर्कोऽनुसन्धीयताम् ।
ब्रह्मास्मीति विभाव्यतामहरहर्गर्वः परित्यज्यतां
देहेऽहम्मतिरुज्झ्यतां बुधजनैर्वादः परित्यज्यताम् ॥३॥

Always deliberate on the meaning of the Upanishadic sentences and take full refuge in the Upanishadic teaching. Abstain from diatribes that have evil intentions. Always deliberate on Upanishadic statements following the logic that is in accordance with the spirit of the scriptures. Day in and day out, experience the state in which one would realise 'I am Brahman'. Give up arrogance of all sorts. Abandon the wrong notion of identification of Self with the body. Restrain from engaging in arguing with the learned.

क्षुद्व्याधिश्च चिकित्स्यतां प्रतिदिनं भिक्षौषधं भुज्यतां
स्वाद्वन्नं न तु याच्यतां विधिवशात् प्राप्तेन सन्तुष्यताम् ।
शीतोष्णादि विषह्यतां न तु वृथा वाक्यं समुच्चार्यता-
मौदासीन्यमभीप्स्यतां जनकृपानैष्ठुर्यमुत्सृज्यताम् ॥४॥

Consider hunger to be a kind of disease and partake your food—collected by begging alms—as a medicine to cure it. Never crave for the delicious food; be contented with whatever you get through the hand of destiny. Learn to endure dualities like cold and heat with equipoise. Don't utter even a sentence without some specific purpose. Develop indifference with those who hate you or envious of you. Don't pay too much attention to common peoples' responses whether it is caring or coarse behaviour.

एकान्ते सुखमास्यतां परतरे चेतः समाधीयतां
पूर्णात्मा सुसमीक्ष्यतां जगदिदं तद्बाधितं दृश्यताम् ।
प्राक्कर्म प्रविलाप्यतां चितिबलान्नाप्युत्तरैः श्लिष्यतां
प्रारब्धं त्विह भुज्यतामथ परब्रह्मात्मना स्थीयताम् ॥५॥

Prefer solitude to be in a blissful state. Concentrate your mind on Brahman, the loftiest Divine Principle. Transcend your awareness so as to perceive the all-pervasive Atman everywhere. Understand that this world is but an illusory superimposition on that Reality. Allow the effect of your past karmas exhaust on their own. With the strength of knowledge of Brahman so acquired, don't again get entangled in the bondage of karmas in the future. Enjoy in this world, the fruits of karmas (good or bad) that have already started producing effects (*Prārabdha*). Even in the midst of this empirical existence, establish your mind in the state of pure non-dual consciousness called Brahman.

EDITORIAL

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Living a Meaningful Life in a Digital World

Meaningful Life

A popular definition of meaningful life goes like this: 'In positive psychology, a meaningful life is a construct having to do with the purpose, significance, fulfilment, and satisfaction of life. While specific theories vary, there are two common aspects: a global schema to understand one's life and the belief that life itself is meaningful.'[1]

This idea is reflected in the Indian tradition in a beautiful word: कृतकृत्य, *kṛtakṛtya*. Here *kṛta* means 'done', and *kṛtya* means 'what was to be done'. This word has three annotations: 1. Having done or discharged anything ought to be done. 2. Having accomplished or attained any object. 3. Contented, satisfied. One who has reached this state is also called *Kṛtakṛtya*. Sri Shankaracharya explains that this word (Gita, 15.20) indicates a person who has fulfilled one's duties. Whatever a person has to do as a consequence of one's birth, all that becomes accomplished when the reality of the *Bhagavan*, the Supreme Lord is known. The Acharya quotes a verse from the Gita (4.33) in this context: '*Sarvaṁ karmākhilaṁ pārtha jñāne parisamāpyate*; O Pārtha (son of Pṛthā), all actions in their totality culminate in Knowledge.' This state of ultimate fulfilment is *Kṛtakṛtya*.

It is evident from the above that the idea of *Moksha* or spiritual liberation is what makes human life truly fruitful. When one leads a life in the light of this noble ideal, one's life becomes meaningful in every sense. This is the loftiest principle that Vedanta presents before humankind.

How to Lead a Meaningful Life?

The higher the ideal, the more meaningful the life will be. Swami Vivekananda considers the highest ideal of human life to be the acquisition of knowledge that leads to liberation. He says: 'The goal of mankind is knowledge. That is the one ideal placed before us by Eastern philosophy. Pleasure is not the goal of man, but knowledge. *Pleasure and happiness come to an end*. It is a mistake to suppose that pleasure is the goal. The cause of all the miseries we have in the world is that men foolishly think pleasure to be the ideal to strive for.'[2]

However, ordinary life is but an unrelenting struggle for pleasure and happiness. It is the fact that makes our life meaningless and hence, miserable. The task before us is to find such a goal that makes life meaningful and in turn, blissful. Vedanta points out that the pursuit of *knowledge* is that single goal.

Knowledge removes ignorance. This is the idea of Knowledge we find in the Vedanta. It also says that the miseries are due to ignorance. The dawn of knowledge leads to the opening of the doors to a peaceful and blissful life. The teaching of such knowledge to whole humanity is the duty the Vedanta has taken upon itself.

Vedanta puts forward the idea of a higher knowledge (*parā vidyā*) through which the immortal is known (*Mundaka Upanishad*, 1.1.5). The lower knowledge (*aparā vidyā*) is just information regarding the facts of life and world and learning of skills needed for a livelihood. In Sri Shankaracharya's words, it is a '*mere assemblage of words*'. He says: 'As the immortal cannot be realised by a mere mastery of the assemblage of words without other efforts, such as approaching a preceptor and spurning all desires, etc., the separate classification of the knowledge of *Brahman* and its designation as *Parā vidyā* are proper' (Shankara's commentary, 1.1.5).

Knowledge Society

According to UNESCO, knowledge societies are about capabilities to identify, produce, process, transform, disseminate, and use the *information* to build and apply knowledge for human development. They require an empowering social vision that encompasses plurality, inclusion, solidarity, and participation. The need for continuous learning is a general characteristic of the knowledge society and the capacity for each individual to learn throughout life is crucial.[3]

This is the ideal of emerging digital technology, which has now perforated every aspect of human life. This gives individuals easy access to a huge amount of information to facilitate continuous learning and assimilation of ideas. However, the question before us is whether such an ideal transforms one's life into a meaningful one or not. The truth is that people are getting burdened by the onslaught of information and are unable to make any *sense* of such superficial knowledge.

Digital technology falls short of building a true knowledge society. A knowledge society is one in which people are enlightened with spiritual wisdom, and enjoy real bliss and freedom. Swamiji envisaged such a perfect society. He says: 'That society is the greatest, where the highest truths become practical. That is my opinion, and if society is not fit for the higher truths, make it so, and the sooner the better.'[4] That society is a perfect society where it is practical to practise the highest ideals.

A digital society does not fulfil the requirements of a true knowledge society. In contrast, the overdependence on digital tools considerably diminishes the *strength* and *ingenuity* of individuals to pursue their intellectual or spiritual endeavours. Digital technology makes human life physically comfortable but may create a vacuum if ethical and spiritual values are not considered. Vedanta strongly asserts the significance

of ethical and spiritual values in transforming the individual life into a meaningful one. It rejects the notion that pleasures and empirical happiness are the *summum bonum* of human life. Also, Vedanta says that a true knowledge society constitutes spiritually enlightened citizens.

The Emergence of a New Human Being

Vedanta proposes to transform human beings into divine ones. It states that *divinity* is the inherent nature of all living beings. The discovery of one's real nature as divinity is the goal of life. Vedanta calls upon every human being to accomplish this goal in this very life. This Vedantic teaching is universal and all-embracing.

In contrast, digital media, according to the experts, is transforming *homo sapiens*, human beings, into *homo connectus*, one who is always logged on to digital media. 'The distinction between the real and the virtual is no longer entirely clear. The line between the two is blurred as the two worlds intertwine in an almost Gibsonesque way—our flesh and blood are now mixed with circuits and devices. We have become wired and wireless selves, *homo connectus*, always logged on.'[5]

What are the ramifications of such an alteration? Human interaction is now being mainly routed through digital devices. As a result, the notion of *connectedness* and the *definition of friendship* is changing radically. 'We're seeing people so absorbed in digital media that it's becoming their *primary reference point* for life',[6] observes Clifford Nass, a communications professor at Stanford University. In their article *Living in a Digital World*, Rosa Llamas and Russell Belk effectively encapsulate this vital change in our way of living as follows:

> Spending a large proportion of our time online, adopting emerging technologies easily, and multitasking fluidly are all signs of the increasingly digital nature of our everyday lives. New media have been integrated into our daily routines and agendas, shaping, shifting, and transforming the way we interact, play, shop, read, write, work, listen, create, communicate, collaborate, produce, co-produce, search, and browse. Each of these actions is now very different from the way we did these things in the pre-digital age.[7]

Another astonishing fact is that a digital consumer develops an alternate self, that is different from one's own real self. 'New devices provide space for the emergence of a new state of the self, itself, split between the screen and the physical real, wired into existence through technology.'[8] Particularly for teenagers, 'technology has become like a phantom limb, it is so much part of them'.[9]

Serious Consequences of Digital Delusion

The scholars show empirical data to prove the catastrophic consequences of the delusion caused by overdependence on digital gadgets.

> Approximately two billion people now tap into the Internet. About five billion people use mobile phones and a growing number of these devices offer sophisticated computing and communications capabilities. There's cell service atop Mt. Everest and in remote South Pacific atolls. Incredibly, the average 13- to 17-year-old in the U.S. sends about 110 text messages per day. In fact, it's become increasingly difficult to go anywhere without getting caught in the tractor beam of digital technology.[10]

Digital technologies are shaping every sphere of human life. In his book *What technology wants*?, Kevin Kelly says that ten thousand years ago, humanity reached a turning point where our ability to modify the biosphere exceeded the planet's ability to modify us. This threshold was the beginning of the *Technium*, which is said to

be the accumulation of inventions that humans have created. We are now at a second inflection point, where the situation has reversed and the ability of the Technium to modify us exceeds our capacity to alter it.

Dr Alan Hunter prophesies in his article in *Prabuddha Bharata* that—

> Credible predictions suggest that within a generation, we may have computers a million times more intelligent than every human combined. Artificial intelligence will far surpass human beings as the most capable life forms on the earth: 'machines' will calculate, communicate and act so quickly that humans would not even comprehend what they are achieving. Integrated with advances in non-biological intelligence, we will surely witness revolutionary changes in energy sources, nano-technology, bio-technology and robotics.[11]

These revolutionary changes are welcome, but the surpassing of human beings by artificial intelligence will indeed be of disastrous consequence.

Digital Consumption with Spiritual Awareness

There is only one choice before us: Whether we should lower ourselves to *homo connectus* or raise from our present state of *homo sapiens* to *homo divinus* (a word that indicates evolution from human to divine). The digital revolution stands for the former and Vedanta vouches for the latter. However, a pragmatic approach would be to utilise the tools provided by digital technology with spiritual awareness shaped by Vedantic wisdom.

It is imperative for us to make use of innumerable benefits of digital technology which leads to comfortable and well-informed living. Also, it is equally essential not to fall into the vicious trap it precipitates. A digital world is only digital, not *real*; virtual reality is just virtual, not *real*; and artificial intelligence is only artificial, not *real*. The awareness of this fact of life helps us to deal with many a problem while living in today's digital world.

Vedanta teaches discernment between real and non-real. It recognises the unreal to be an illusion and impermanent. Unreality appears to be real due to delusion. This delusion causes untold suffering and deprivations. This Vedantic lesson will be of immense utility in the digital world. It makes us aware of reality when we are surrounded by digital experiences that are mostly artificial and unreal. It also prevents us from being swayed by the illusory world of digital tools and stand firmly established in the reality.

The digital fantasy is the one that is projected onto the empirical reality. However, Vedanta teaches that the empirical world is *equally* an imagination when compared to spiritual awareness, in which absolute reality is experienced in a crystal clear vision. The Vedanta exhorts us to develop this *exalted awareness* even while living in the apparent world, especially the digital world.

Spiritual Awareness

The Vedanta scriptures give a vivid description of spiritual awareness. The *Isha Upanishad* says:

> **यस्मिन्सर्वाणि भूतान्यात्मैवाभूद्विजानतः ।**
> **तत्र को मोहः कः शोक एकत्वमनुपश्यतः ॥**
>
> When to the man of realisation all beings become the very Self, then what delusion and what sorrow can there be for that seer of oneness?[12]

It is the ideal spiritual awareness depicted in the Upanishads. This should be the guiding light for all our mundane activities. That is, we should practise this awareness consciously in our day-to-day life until it becomes natural and spontaneous. This will transcend our psyche to higher levels in which we will be able to see all happenings in our life from a true perspective and enjoy the bliss of the Divine in every circumstance of our life.

Vidyaranya Swami, in his *Panchadashi*, describes how to perform daily activities with spiritual awareness. He says that worldly duties do not come in conflict with one's knowledge. 'This world is illusory, *Maya*, and the Self is by nature pure consciousness. How can such knowledge be opposed to one's worldly activities? Once the nature of the Self has been conclusively determined, the knower can speak of it, think of it, or meditate on it at will.'[13] The clear-sighted knower from whose heart all attachment has vanished is a liberated soul, whether he performs his functions or not. It is because his mind is free from all desires or former impressions and has nothing to gain from either action or inaction.[14]

Spiritual awareness teaches us to transcend our present state of dualities and fix our minds on the ultimate Reality. It does not come in conflict with our everyday duties. Instead, it elevates our minds to such a lofty pedestal enabling us to see everyone and everything as manifestations of divine consciousness. This will lead to a blissful life even in the midst of our numerous commitments and responsibilities.

Conclusion

The lives and teachings of Sri Ramakrishna, Sri Sarada Devi, and Swami Vivekananda are the living Vedanta in the modern period. They are also the guiding lights in the darkness enveloping due to the unbridled offensive of digital technologies over the human psyche. Sri Ramakrishna emphatically says that the goal of human life is the realisation of God, while unselfish work is only a means to that end. He exhorts us to lead a life of dedication and service:

> Therefore I say, he who works in such a detached spirit—who is kind and charitable—benefits only himself. Helping others, doing good to others—this is the work of God alone, who for men has created the sun and moon, father and mother, fruits, flowers, and corn. The love that you see in parents is God's love: love has given it to them to preserve His creation. The compassion that you see in the kind-hearted is God's compassion: He has given it to them to protect the helpless. Whether you are charitable or not, He will have His work done somehow or other. Nothing can stop His work.[15]

The *God-centred life* advocated by Sri Ramakrishna in such a beautiful manner is the finest way of leading a meaningful life in a digital world.

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Wisdom for the Digital Age

Swami Atmarupananda

When I was a new brahmacharin, full of the green enthusiasm of a neophyte, nothing was too spiritual for me. I loved to read about the austerities of the direct disciples of Sri Ramakrishna— stories of renunciation, grand realisations, Sri Ramakrishna's own world-forgetting absorption in the search for God and his extraordinary experiences. Everything that seemed to be a compromise with the world seemed despicable. Now, with the wisdom of age, I realise just how green that enthusiasm was, and understand that much of it sprang from a fear of the pains and difficulties of ordinary life. But at that time, it was what propelled me into a dedicated spiritual life, and so it had its purpose.

Like many enthusiastic newcomers, I devoured the literature of the Ramakrishna Movement. The more radical it was, the more I loved it. Then one day in 1970, as I was reading a book entitled *The Disciples of Sri Ramakrishna*, I came across some teachings of Swami Vijnanananda, a direct disciple of Sri Ramakrishna. There he said: *'Real welfare lies in using things properly; wrong use of things brings misfortune*.'[1] That shocked me. How could a disciple of Sri Ramakrishna equate wisdom with such pragmatic, everyday advice? What did that have to do with the realisation of God, the renunciation of the world, samadhi, ecstasy, or *jivanmukti* (freedom while living)?

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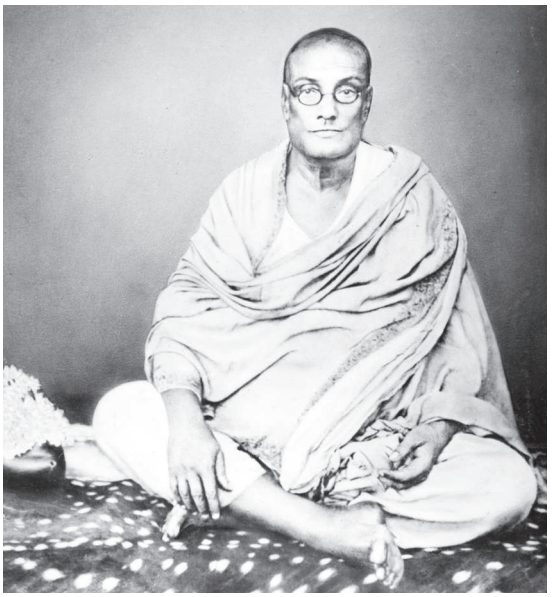

Swami Vijnanananda (1868–1938)

That advice could have been given by an ordinary carpenter or auto mechanic or housekeeper. I thought, well, he *had* been an engineer before he renounced the world, so maybe it was the engineer in him that was speaking, but I had no use for it. I hadn't left home and friends to join a monastery for learning housekeeping lessons.

Now I realise how wrong my reaction was, how much wisdom lay in that teaching, how much I have gained from that simple statement over the succeeding decades. Substituting 'tool' for the word 'thing' in the quote above, I now understand that real welfare does indeed lie in using tools properly, because everything is a tool—absolutely everything except for the Atman or God. *Prakriti* itself is a tool; as Swami

Vivekananda said: 'Remember! ... "Not the soul for nature, but nature for the soul!"'[2] The mind, the body, the senses, external objects—everything is a tool. And wisdom lies in using tools properly.

'Proper use' includes understanding what the true, higher purpose of everything is. It also includes respect for the tool, care in its use—focus and attention while using it.

Referring to the Cultural Revolution in Maoist China (1966–76), Swami Ashokananda once said that during that dark period, great professors, scientists, artists—the best minds of China—were removed from their positions and sent to re-education camps where they were made to do hard menial labour such as shovelling pig manure all day. Yes, the Swami said, one can make the greatest minds of a country shovel manure all day every day, but is that the best use of such people? Then he made his intended point: that's what we are doing with the *buddhi*—the higher, intuitive mind or intellect: we make it shovel the manure of the senses all day every day. Proper use of the *buddhi* is to train it, purify it, direct it towards God, and then give it its autonomy to shine with the light of pure consciousness, whereby it becomes the light on our path and the instrument of spiritual experience. '*Real welfare lies in using things properly*.'

As Sri Ramakrishna used to say, Maya has two aspects: *vidyā māyā* and *avidyā māyā*, or the maya of wisdom and the maya of delusion—the maya that leads us towards liberation and the maya that leads us into bondage. *The proper use of tools.*

The senses bring us experience from the outer world—good and bad, uplifting and demeaning, inspiring and depressing. Hence, we chant the Vedic *Shanti mantra*: 'May we hear with our ears that which is noble; O ye worshipful ones, may we see with our eyes that which is uplifting.' *The proper use of tools*.

The voice can be used to educate and uplift others, or it can be used to spread malicious gossip. It can be used to repeat the mantra, or used to curse others. The mind can be used to think of God, or it can be used to devise schemes for defrauding others. 'May my speech be established in my mind; may my mind be established in my speech.' *The proper use of tools*.

The hands can be used to serve the poor, or they can be used to hurt a child. A pen can be used to write a letter of consolation to someone overcome by sorrow, or it can be used to forge a check. Gunpowder can be used to blast a path through solid rock, providing access roads to remote villages; or it can be used in a terror attack to kill innocent people. Electricity can be used to provide light, or it can be used to electrocute [injure or kill (someone) by electric shock]. *The proper use of tools*.

Modern Technology

Modern technology is a term covering the tools developed through the application of modern scientific knowledge, together with the engineering know-how enabling that development. As with all human-made tools, modern technology is used to enhance and extend the organs of sense and action. The telescope and microscope extend the power of the eyes. A bulldozer extends the power of our arms and legs. A sound system amplifies the voice, and a hearing aid extends the reach of the ear. The same with gunpowder, nuclear power, the digital world— all tools for extending the reach and power of our ten organs of sense and action. And as with all tools, they can be used for good and for ill.

The printing press was developed to spread knowledge, but it is also used to spread propaganda and idle gossip about movie stars. The cinematography was developed as a grand new way to spread ideas and also to entertain, but it

is used as well for degradation. Radiation was first discovered through scientific curiosity and the love for knowledge; then it was developed into technology for medical purposes; but soon its close relative—nuclear power—was developed for massively destructive purposes. The study of human genetics promises many extraordinary possibilities for humanity, but it also opens frightful paths of abuse. Virtual reality is a powerful tool, with possibilities for greater good, but as much energy is spent on developing it for evil purposes as for human betterment. The field of robotics is an extraordinary development, but it can be used for war and human enslavement.

The more powerful the tool, the greater the good it offers, and equally the greater the evil it can inflict. Tools are neutral, power is neutral. We use tools according to our character. A tool in itself offers greater power, not greater good for humanity. The most powerful tools may bring the destruction of the world. A tool offers good if the use is good, and the use depends on the heart of man.

But neither science nor education is presently guided by concern over the human heart. Neither is preoccupied with the development of virtue; neither sees the character as the essential requisite for human betterment. The love for knowledge is a noble thing, but only when supported by an ennobled heart.

The Internet and the Digital Age

As with most new technologies—new tools—the internet was born with great hope. It promised the democratising of information, making it available to all. And it has gone far towards fulfilling that promise, in spite of efforts to privatise and control access. It has also gone far in democratising opportunities for the disabled, the poor, the disadvantaged, by providing effective tools for communication, for creativity, and for entrepreneurship. It has made it possible to contact people all over the world, wherever others have access, and has thus facilitated communication more than any previous technology, bringing the world together in a way unimaginable fifty years ago. The miniaturisation involved in cell-phone or mobile technology allows one to carry a powerful computer in one's pocket, and it allows a villager in India or Africa to communicate with people in the Americas. Video technology allows the villager even to see the people on the other end of the connection in real-time.

My own first realisation of the internet's power came in 1996 after I had bought two tokay geckos [nocturnal lizards] as pets to release in the ashram in San Diego. After releasing them, I noticed that they suffered from diarrhea. What in the world is one to do with a sick tokay gecko? The pet store clerks said: 'We just sell them; we don't know anything about them.' Then I thought, let me search on the internet; surely it's an idle thought, but let me try. Note that this was when web browsers were still new, web pages were new, searches were new. I did a search on 'tokay gecko diarrhoea'; and, sure enough, I found several pages of helpful information on the problem and how to cure them of it. (It turns out that the diarrhoea was caused by a lack of calcium in their diet.) How wonderful!

That, of course, is a surprise to no one now. Whenever we want to know anything today we simply 'google' it. A person who has grown up with Google would find my surprise over the tokay gecko discovery surprising. But there was no such thing as an internet search just three decades ago.

During the Covid-19 pandemic in 2020, when travel became inadvisable, people began to use Zoom and other video conferencing services. Our Vedanta Societies also began to use such services to broadcast their classes and lectures and

seminars, since in-person activities were closed. This has allowed a new surge in interest: people anywhere in the world with the interest can tune in: the audience is no longer limited to those who can drive to the temple. As some centres begin to reopen now, there is pressure to keep the live broadcasts as well so that people can continue to join from afar.

As schools closed in 2020–21 due to the pandemic, education has continued in many instances through the internet. A surgeon sitting in Kolkata can—through video technology and the internet—direct medical technicians in remote villages in real-time, allowing the technicians to perform complex medical procedures safely. Skilled medical help is thus made available in areas where it never existed before.

I personally know several people with varying disabilities who have found social and creative liberation through computers and the internet: new digital tools have allowed them to write, to compose, to draw, to communicate in ways they could never have dreamed of doing before.

Virtual reality can be used to train police and the military, teach pilots how to fly, train surgeons. What a saving in money and in resources! And the entertainment possibilities are immense. Now with 3D printing, houses can be 'printed', allowing for cheaper and more flexible and more creative construction. Prosthetic limbs are being printed, making them cheaper and therefore more accessible, more colourful, more personalised.

The Internet of Things (IoT) is another wondrous development, whereby previously insensitive, inert implements have been given artificial sentience by embedding computer chips, which then connect them to the artificial sentience of the internet. Anything from the soil in a farmer's field to a space station can be connected, can share information.

All of these technologies have revolutionised modern life, arguably more than any single invention in history. And we are only beginning to realise the potential of the technologies.

A Tool is Just a Tool

And yet, a tool is just a tool. In that, the internet is no different from a shovel or a pry bar: 'Real welfare lies in using things properly; wrong use of things brings misfortune.' And we have already seen the widespread misuse of digital technology and the resulting harm.

Just as we have not here catalogued all of the uses of modern digital technology, so we will not catalogue all of the problems caused by the technology, and the possible misuses. What we will try to do is to point out some of the widespread problems and potential solutions.

First, it is important to recognise that we can't stop human progress, even if we want to: *there is an inherent will to know in the human heart, and also an inherent will to control nature.* Fighting against those human tendencies, as some conservative religious forces have tried to do, doesn't work. If humanity finds a closed door in the universe, it will find a way to open it in order to see what is inside. As Swami Vivekananda said, 'The whole history of humanity is a continuous fight against the so-called laws of nature,'[3] that is, a fight against the limitations set by nature. What we can do is to refine the human heart so that it seeks the good, the beneficent.

A tool is a tool: it has its uses and its abuses. It is the human heart that can choose the proper use and eschew the abuse.[4] Here the ancient Vedanta tradition is helpful in developing a new sense of morality.

According to Vedanta, morality is not an external command from God and it is the sages who decided how they wanted humanity to behave for their own inscrutable reasons. They don't say:

'Don't steal, because I don't want you to steal; don't kill because I don't like that.' They say, it is in the nature of things, it is part of the structure of the universe, that if you harm others or harm yourself, you will suffer, because there is an underlying unity to the universe. Do good to your brother and sister beings because that will uplift you: *you* will be a better person, *you* will benefit. And so, the proper use of tools will bring *you* well-being. Morality isn't punitive, it isn't directed from without; it is based on the nature of the universe. Being in tune with that cosmic nature brings inner harmony and clarity because it is truth—the cosmic order of truth called *rtam* in the Vedas, based on the underlying unity of existence.

Thus the digital world can be used for human betterment, or it can be abused and lead to harm. So what are some of the harms of the digital world? (I'll restrict myself to some of the direct harms to us, the common users of digital technology.)

For one thing, many cell phone apps—no matter how helpful—are designed to keep us engaged. We thus lose our independence, our attention becomes trapped by the app. That's not accidental, it is the intended effect. Cellphone addiction is a serious problem. Many people feel insecure without their cell-phones. It's no longer a tool we use; *it uses us, it possesses us*.

A common joke is of the family sitting at the table for supper, all looking at their cell phones: they are texting each other rather than talking. It's funny because it's so sadly close to true. This is another problem: people, particularly young people who have grown up with cell phones, are substituting digital communication for face-to-face communication. What's the harm? The harm is great. We lose the ability to communicate person to person. The cell phone or computer screen is impersonal: we can't read the emotions through the screen. We try to work around that by using *emoticons*, but that's not the same thing. There are many instances where someone posts the most insulting things about another, and then adds a smiley face as if to say, 'I am just joking'. No, they aren't. The smiley face is simply there to say: 'Yes, I know I just insulted you, but let's just pretend it's all in good humour; so if you get mad that's your problem.'

This loss of personal contact and communication leads further to isolation, to the loss of the power of communication, and to the loss of emotional maturity.

When I have spoken to students about the need for developing their memory power, they argue that it's no longer needed, because the information is at our fingertips: if we need it, we can google it and have it in seconds. This argument is given even in India, where memory used to be cultivated as part of ordinary education. And this is another problem, because the development of memory enhances intelligence. The knowledge present in the memory is very different from knowledge accessible on a cell phone, or even in a book. The knowledge that is internalised is processed and organised in the mind and related to other knowledge in the mind and has become a part of our thinking. Also, the power of memory is very important in spiritual life: it is tied to the power to keep what is important in front of the mind, to 'remember' the essentials of the path, to remember God.

Connected to the disvaluing of memory is the loss of the ability to follow a complicated train of thought. The internet is great for getting quick facts and overviews. But reading books forces us to follow a complicated train of thought, which develops the power of sustained attention.

Furthermore, there is a difference between reading a book and watching a video. Reading a book demands proactive attention and participation in the reading matter, while watching a video does not. That is because a video provides the words *and* the visuals, and so we passively sit

back and watch, simply absorbing what is presented. A book requires us to use our imaginations, to picture what we are reading. Yes, video is a powerful technology that can make a deep impression on the mind and it, therefore, has its important place, but it doesn't do for us what reading does. Each is needed.

There is also the problem that the digital world is always available; we need never be bored because we can just pull out our phones and watch TikTok or play a game. But the healthy mind must be able to confront boredom, not avoid it by filling the void with useless entertainment. That's especially true when we come to the spiritual life: we have to learn to turn the mind towards God whenever there is a moment of disengagement. If we turn instead to our cell phones, spiritual life becomes impossible. There are no more periods of disengagement. This is very evident in young people, East and West: today they are accustomed to having their attention engaged all the time: if their cell phones are taken away, many have no idea as to what to do.

The Solution

These are by no means all of the problems, but enough for this discussion. The solution is simple, and it consists of the following elements:

- Learn to see the cell phone and computer as tools, nothing more and nothing less. They exist to facilitate certain activities. They aren't a substitute for life.
- Strictly limit cell phone and computer use. Don't forbid it: that won't work. People need to learn how to use digital devices and information well to succeed in the modern world. But set limits for oneself and, if one has children, for them as well.
- Spend time outdoors, away from devices, directly contacting the physical world and the physical presence of actual people.
- Regularly spend time doing manual work. This is especially needed for India, where for centuries the upper classes have considered manual work beneath them, resulting in highly educated people with no common, practical sense, people who have vast engineering knowledge but can hardly perform a straightforward physical task. And this is especially important in the modern digital world where the nature of the technology is non-physical, non-analogical.
- Don't multitask. The modern world asks us to multitask, but research has shown that all tasks suffer when we multitask. Do one thing at a time with full concentration.
- Read books. Use the internet only to help gather information, but that is not education nor does it ennoble the user. Reading, as said above, does something which browsing the internet can't do. Browsing is wonderful for gathering information for research; use it where it excels.
- Seek silence every day, disengagement of the mind from the world and all its tools, so that it can be redirected towards God.
- *Seek wisdom more than information. Information has its use, but it isn't wisdom.*

'Real welfare lies in using things properly; wrong use of things brings misfortune.' That is as true in the digital age as it was for the caveman.

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Rule of Technology

Swami Nityasthananda

Is this the future we were waiting for?

IMAGE: HTTPS://WWW.PEXELS.COM

We hear about political ideologies like socialism, communism, capitalism, democracy, autocracy, and so on. Many political parties are professing these ideologies and compete with each other to rule the country, if possible to rule the whole world. We also observe that in course of time, the ideology gets overshadowed by party politics and lust for power. There is another regime that rules all the parties and ideologies; rather than, the whole world. *It is ruling imperceptibly*. No party can afford to ignore it, and no society can survive without taking recourse to it. All areas of progress are bound by it. The vast amount of human thinking is in its inflexible grip. Human intellect is inextricably caught within its whirlpool. Those who oppose it also have to take recourse to it to express their antagonism. It has become an inseparable part of human life. As its benefits are being increased, reducing human efforts, our slavery to it has also increased. It is imperceptibly expanding its regime. It is entrapping everyone, spreading its tentacles all around. Ironically, since we have to take its support to escape from its tyranny, it is increasingly becoming impossible to be out of its fold.

What is this all-powerful regime that is ruling the whole world? It is the rule of technology (*Technocracy*). The word 'technocracy' was coined by Theodore Roszak, an American academic. We are living in the age of technology. Our empirical life here is intertwined with technology. Now, all objects of our daily use depend on technology. Natural resources like air and water are also obtained through technological means. Even our food is industrialised. Our medium of communication is completely dominated by technology. Our educational system is increasingly engulfed by the most sophisticated technology, thanks to the present Covid pandemic. Art, literature, and music are also in the inescapable grip of technology.

It is possible to stimulate love, compassion, anger, and other feelings artificially. Artificial Intelligence can replace our intellectual activities. AI-driven machines controlled by external forces can supervise the functions of different

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parts of the body. In this way, a human can be reduced to a human-machine, being controlled and manipulated by inexorable machines. Here one is reminded of Swami Vivekananda's following words: 'Machinery in a small proportion is good, but too much of it kills man's initiative and makes a lifeless machine of him.'[1] In his opinion, it is better to commit mistakes being impelled by one's own will and intelligence than to be good as a machine.

The fast advancement of technology, fuelled and augmented by Artificial Intelligence is proving beyond doubt the insightful observation Swamiji made long back when the industrial revolution was at its inception. Another confirmation of Swamiji's prescient statement comes from a poignant picture of future humanity given by Wallace Shawn and Andre Gregory:

> The 1960s represented the last burst of the human being before he was extinguished. And that this is the beginning of the rest of the future, and that from now on there will simply be all these robots walking around, feeling nothing, thinking nothing. And there will be nobody left almost to remind them that there was once a species called a human being, with feelings and thoughts. And that history and memory are right now being erased, and that soon no one will really remember that life existed on the planet.[2]

The foreboding of such a state can be envisioned by the following incident narrated by Nancy Colier, a psychotherapist, interfaith minister, author, and public speaker:

> I recently watched a woman almost run down by a taxi because she was so focused on her smartphone she did not notice she was standing in the middle of the street. Two men pulled her out of harm's way at the last moment. When she made it to the other side of the street, she got right back to her device, as if nothing had just happened. She was not fazed by the event, at least not enough to interrupt her flow of texting or even to thank the two men who saved her life. Technology is the powerful tool for the communication and yet the way we are using and the authority we are awarding it are also making it into powerful impediment to our sense of presence and awareness.[3]

Technology has ushered in a digital world empowered by Artificial Intelligence. The initial jubilation about it is turning itself into a nightmare. Shoshana Zuboff says:

> We celebrated the new digital services as free, but now we see that the surveillance capitalists behind those services regard us a free commodity. *We thought that we search google, but now we understand that google searches us*. We assumed that we used social media to connect, but we learned that connection is how social media uses us. ... We have begun to understand that 'Privacy' policies are actually surveillance policies.[4]

Maladies of the Rule of Technology

The rule of technology renders human life meaningless. We become pigmies before the giants of machines—helpless and mocked at by the very machines that we have created. We have delegated all our works—physical, intellectual, emotional, and the like—to machines and have become puppets in their hands. Though it appears that we are handling the machines, we are really being handled and controlled by them without our knowledge, just like a capricious horse that takes its rider to its own disastrous destination. Mesmerised by digital devices, humans have succumbed to temptation and as a result, their outlook, behaviour, and lifestyle have been increasingly changed. Rajiv Malhotra in his book *Artificial Intelligence and Future of power* says:

> While there is no way to say with scientific proof that people were more civilized or considerate in past decades, what is clear from the reports I receive and all the people I have interviewed on this topic is that the digital age has ushered in a culture of noteworthy bad manners. In addition to my own research, a study by the modern etiquette publisher Debrett's found that three in four people now think manners have been destroyed by cell-phones, laptops, tablets, and social media.[5]

When there is nothing to do and nothing to contribute, human life becomes meaningless and irrelevant. As a result, one loses love and respect for life and looks upon oneself with contempt. This lack of self-love is the root cause of many mental maladies prevalent in society at present. Happiness is eluding us despite plenty of means of happiness. Even then, the rule of technology tries to perpetuate human suffering by assuring a utopian era to come in future.

Is it possible to be free from the despotic rule of technocracy? We cannot be completely free from technology since it is irrevocable. The technology had its origin in the prehistoric age when human beings started using rudimentary instruments for survival, sustenance, and enjoyment. These have taken different forms with the advent of digital technology, becoming an inseparable part of human life. However, we should not allow technology to rule us; rather, it must be under our control. To achieve this, we must be masters of ourselves within. When we are slaves to ourselves, we are destined to become slaves to everything outside.

Mastering Ourselves

What is meant by being the masters of ourselves? Our senses, desires, temptations, emotions, and the like must be under our control. We should not be helplessly ensnared by them. Since time immemorial, all enlightened sages repeatedly declared that desires are the root cause of all miseries. However, according to the philosophy of technology, fulfilment of desires is happiness. Also, it is thought now that happiness increases in proportion to the fulfilment of desires, and technology promises to provide everything for the fulfilment of desires. The falsity of this promise is obvious when we look at the present condition of society. We must recollect and reflect on the ancient wisdom expressed in the following verse:

> **न जातु कामः कामानां उपभोगेन शाम्यति ।**
> **हविषा कृष्णवर्त्मेव भूय एवाभिवर्धते ॥**
>
> The desires can never be satisfied by fulfilling them; instead, it increases like fire fed by ghee.[6]

Even while being ancient, this statement has modern relevance. Read the following statement in the report of the Hover committee, appointed to study economic trends in the United States:

> This inquiry has revealed that human desires are endless, that there are no new desires that will not make way for newer desires as soon as they are satisfied.[7]

In fact, *desires are a sort of mental and nervous tension*. When a particular desire is fulfilled, one is relieved from the tension for the time being, and this release from the tension is what is called happiness. This happiness is short-lived, for other desires would be waiting behind, clamouring to be fulfilled. Since all desires cannot be fulfilled, the increase of desires will only increase misery. *So the only way to minimise the dependence on technology is to minimise our desires, provided we really value freedom.*

Real Source of Happiness

The real source of happiness is not technology, but the close unsullied human relationship. Contrary to what is generally claimed, technology

increases the gap between two persons. Now we are living in an age of distance. So we have distance education, online classes, smartphones, and the like. Marian Kester, reporting in the *Toronto Globe*, says: 'If children are separated from their parents by hours of TV, from their playmates by video games, and from their teachers by teaching machines, where are they supposed to learn to be humans?'[8] And, 'biophilia hypothesis' suggests that 'human beings have a deep-seated impulse to affiliate with other life forms'.[9]

Though close physically, we may get distanced emotionally. We are closer to the persons behind the screen than to the ones beside us. The present Covid situation is catalysing and necessitating the maintenance of social distance, adding fuel to the sufferings of the people. At this juncture, what is urgently needed is the proper understanding that *it is the good human relationship that makes us happy and not any amount of entertainment programmes that technology provides*. To achieve this, we have to pay attention to the question of how to improve our human relationships.

Physical crime is replaced by cybercrime. The prospect of a cyberwar is also looming large. Physical stealing is taken over by digital stealing; physical conquest is overshadowed by psychological conquest. Technocracy is expanding its domain insidiously capturing all human dimensions of personality. Still, there is one domain where technology cannot enter, and that is, spiritual. According to our scriptures, everything is material including the intellect, being a product of *prakriti*. *So there is no wonder in artificial intelligence replacing natural intelligence*. Since our real nature is spiritual, if we establish ourselves in our own natural self, we can remain safe unaffected by the onslaught of technological invasion. The moment we cross this *Lakshmana Rekha* (a strict convention or a rule, never to be broken), we get consumed by technological demons.

Conclusion

Perhaps it is possible to create a machine that behaves like a human being, by simulating the human brain. Still, it is only an intelligent machine with unconscious intelligence, without any awareness of what it is doing. Even our natural bodies are functioning with unconscious intelligence, and we are seldom aware of what is going on in our own system. *Awareness belongs to the spiritual realm*, and cannot be simulated. It is this awareness, that is unique in a human, which distinguishes him or her from machines and other living beings. Because of this *Presence*, everything that happens in this human system can become an *experience* to the person. Whereas in the case of a machine, every happening is only a process without being experienced by anyone, however sophisticated it may be involving artificial intelligence. So, to be real human beings, we have to be in this *Presence*.

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Living Safely in the Digital Way of Living

Swami Satyapriyananda

The two expressions 'Living safely' and 'Digital way of living' are both vast as the sky and deep as the ocean. In this article, a humble attempt is made to handle the topic judiciously by covering both the vastness and depth in an optimal manner facilitating the interested reader to pursue in-depth whatever aspect appeals to him or her, by searching on Google or consulting standard books on the topic. This article itself is based on such an approach.

The principle behind a happy contented spiritual life is to take care of our *needs* and avoid *luxuries*. In the digital way of living, it can be interpreted thus: one should install only those software applications [hereafter apps.] that are needed and avoid clustering the smartphone with many apps over and above the bloatware that are loaded by the smartphone manufacturers, which are not essential.

To appreciate the idea of living safely one must read the histories of nations. Take the case of India: Muslim invaders and British imperialists invaded the nation, plundered its wealth and committed genocide. It was total destruction all around. India was therefore in a state of slavery for a long thousand years. The hand of the devil was very much visible in India, and such too was the experience of other nations as either the perpetrators or the victims. Such a situation is owing to the absence of education on the solidarity of the universe at the physical, mental, and spiritual planes. So long as this education on solidarity

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IMAGE: HTTPS://WWW.SCIENCENEWSFORSTUDENTS.ORG

does not reach vast masses of humankind, one cannot have universal love or oneness. Extreme caution is therefore needed whenever we talk about a new technology or a new revolution. There have been several revolutions in the past and the Information Technology revolution is what confronts us today. We are getting sucked into it by choice or by design. The world is becoming more and more digital from its humble beginnings. Today we can do many things sitting in the confines of our own rooms which could not have been dreamt of before. 'Work from home', 'learn from home', 'exercise from home'—these have become the new norms of living, especially on account of the Coronavirus. The influence of the digital way of living is very overwhelming. Hence, there is a need to understand it and use it safely and effectively.

This article focuses on (a) the Digital World; (b) the ecosystem of the Digital World; (c) 'Artificial Intelligence'; (d) its usage and impact on humanity; and (e) the risks involved. We also pay attention to (f) what it means to 'live safely in the digital way of living' and (g) the spread of the Vedantic message of Universal Love and Oneness in the digital scenario.

The Digital World

The digital world is about processing 'data' and generating digital 'information' of a variety of kinds—text, voice, images, videos, and other types—for fast *access* from a variety of sources, for fast *communication* between people or machines, and fast *decision making*. We get more easily connected with our families wherever they are on the globe, our communities, our nation, and the rest of the world. It happens through quick access to world news, watching clips of events, and interacting with a variety of people from across the world as though they are seated just next to us.

The digital world comprises a variety of digital electronic 'gadgets' in our hands connected to large behind-the-scenes electronic machinery. And almost all of these run 'software'—a series of 'instructions', perhaps millions and millions of it—so that the gadgets do what they have been intended to do. Software architects and engineers program the instructions for these gadgets in many complex ways. These instructions are at the core of applications or 'apps'. The gadgets could be the many devices we use everyday—the mobile phones, the cameras, the computers, the televisions, the home accessories, the medical devices in everyday use, the music system, the surveillance cameras around our homes, the refrigerator, the cooking range, the air-conditioner, the washing machine, the cars, and two-wheelers. In fact, we go through almost all aspects of our everyday life using one digital device or the other. With advancements in Information Technology, all these devices are interconnected and work together in unison to make our lives safer, better, and more efficient. The gadgets are a *force multiplier* enabling a common person to accomplish a lot more in daily life. So there is an excitement in using them, since many positive complex tasks can be accomplished at once.

Three decades back, every home used to have a 'separate' music system, a camcorder, a big sized computer, a VCR, a television, a telephone, and an electronic diary. Indeed, it was very expensive to own them. However, the rapid developments in software and technology have reduced all of these various units into just one device called the *smartphone*, and made all of them things of the past. Nowadays, even small kids own an advanced smartphone loaded with the latest apps; they can make their choices and do much more. In days bygone, family time was used to watch a science documentary *or* hear music *together*, while now each family member, though seated *together*, is lost in his or her own digital world created by the

so-called social media apps that are made specifically for social interactions with others. The smartphone is a very powerful albeit small and sleek computer in our hands. Its power is amplified because it is connected through very fast wireless communication technologies to a huge backend computing system called *cloud computing*. Along with large scale software running on these cloud computing server farms, these smartphones have opened up vistas of human imagination which had not been thought of earlier. They amplify the capabilities of humans to achieve their specific aspirations, perhaps drifting into grey zones bordering digital addiction.

The Ecosystem of the Digital World

The ecosystem of the digital world comprises the smartphone, the internet, the cloud computing server data centres, the peripheral sensors, actuators and devices called Internet of Things (IoT), a variety of gadgets like cameras, autonomous vehicles like the drones, robots, and of course the software comprising AI (Artificial Intelligence) running over all of them.

Though these social media apps are very intuitive and deceptively simple to use, they are indeed very complex—they have 'a core purpose' to serve, and they 'leverage the cloud computing' in a big way by trying to service multiple users who are interested in purpose-oriented apps. Apps can be of a great variety. Now there are apps to exercise everyday and keep track of our fitness; listen to *bhajans* and music; look up the weather condition; find out and obtain directions for an address to visit; keep track of our expenses in a diary app; follow news and views; lend one's voice to various causes and movements one is passionate about; control the lights, fans, air-conditioning, and doors in our homes; interact and read up on what one's near and dear have to say; make video calls to communicate and watch them even as they speak; participate in educational classes and conferences sitting in one's own home or office; video record and citizen report on an unusual event happening in one's backyard; pay one's tax dues; interact with the doctors on one's health problem immediately via video calls instead of visiting them in their clinics; complain to the local public representative on a social problem or on some common amenity gone awry; play network games simulating battlefields and fights; and also attend to timely religious congregations. Indeed, all of the above and much more can be easily accomplished on one's own smartphone. Modern life has at once become simplified and yet overly more complex due to smartphones. If there is any disruption to this digital world, we feel like a fish out of water.

Artificial Intelligence

At the core of these social media apps as well as other apps installed on the smartphone, is a new technology that has been making waves. It is called '*artificial intelligence*' (AI). It is what makes the smartphone truly *smart*. It understands the user much better than the user knows about himself or herself. It keeps track of the use of various social media apps, 'learns' about the mindset of the user through the study of every transaction that is done. And, it is capable of highly accurate predictions on what the user will do next. It nudges the user to behave fulfilling the needs of its clients: perhaps buying products even if it is not needed by the user.

How does the core of an AI driven app work? Programmers write instructions for various digital gadgets to look out for and learn various patterns that exist in a given set of data, called the '*training data*'. These instructions are called 'learning algorithms' using 'neural networks'. This training data typically tends to be huge. If several thousands of photos of temple *gopurams* or towers are given to

the learning algorithm and labelled as temple *gopurams*, then when a random photo, which could be anything, is given as a test case, the learning algorithm will recognise and tell whether it is a temple *gopuram* and with what probability it is so. It can then distinguish an Islamic Minaret or Christian Spire as not being a *gopuram*.

AI algorithms do not reason to come to their conclusions. Instead, they mimic how humans think. While humans might be assuming that they are reasoning, the AI algorithm just mimics as per the instructions coded by its expert programmers. In fact, AI algorithms implicitly encode their programmer's unconscious biases and prejudices as well. That is a big problem. What has been coded by programmers in Western countries and considered good for them, like their political correctness, tend to be prejudiced in its inferences when used in developing countries like India. It is because Indian societal cultures and values are very different from the norms in the West. Many times, what is traditional and normal for Indian society is flagged as abnormal by many of these social media apps.

It would be improper if at least a passing reference is not made to *Cloud Computing* and the related technologies (edge computing, virtual reality, augmented reality, telepresence, holographic presence, deep learning, internet of things, big data predictive analysis, deep fake videos, conversational AI and multimodal communication) which being too technical is beyond the scope of this article.

Usage and the Impact

These apps power up the following and one should be aware and use it effectively:

a) ***e-Governance, Smart Living and Smart Cities***:

Municipal services, seamlessly paying taxes, governmental reach out, getting a power/water/gas connection or availing one's monthly rations, essential services and support, power, public amenities and usage, food supplies, fuels, water, democracy and voting, e-lockers, identity validations, compliances with law, certificates of land records or births or deaths or good health, and so on.

b) ***e-Healthcare***:

1) AI has a substantial positive impact on clinical treatment, patient diagnoses and monitoring as well as population health. The speed with which the current pandemic is being effectively responded to is amazing. Also, hospital management, medical records management, physicians and doctors workflow, and security systems and many such, often look to AI for decision support. It is transforming clinical imaging, personalised medicines delivery and monitoring, drug discovery, and predictions as well as forecasting health-related events like pandemics and many more.

2) AI-assisted drones are used to transport critical medical supplies at a very short notice across mountainous terrains like in Uttarakhand during natural disasters and emergencies.

3) AI-assisted surgery robots have assisted expert surgeons to perform long, arduous, delicate surgeries in a very focused way because they have taken care of continuously and simultaneously monitoring hundreds of critical parameters and keeping them within acceptable limits.

4) AI-assisted Covid-19 management across nations and within India has been a tremendous blessing. Widespread usage of the *Arogya Setu* app as well as targeted mass vaccinations to the tune of more than 130 million Indians has been unheard of across the world in pandemic response and control.

5) Ambulance, hospitals, and virtual doctors are other areas in which AI has come to perform well.

c) ***Internet Banking and Finance***:

1) Partial automation of the customer service by handling the account, loan, or card related inquiries, and helping organise bank statements, property

documents, salary slips, financial papers, and assisting loan officers with documentation.

2) Financial Crime detection, Credit Risk Assessment, AI-powered conversational banking, Predictive Analytics, and recommendations in Banking and Finance.

3) Large scale institutional financial crises are being better handled by AI-assisted banking and financial industry software that works in tandem with the RBI (Reserve Bank of India) directives and guidelines.

4) Routinely large scale scams and money-laundering efforts have been busted in a timely way by applying AI technologies.

d) ***Education***:

1) Exclusively used by the teachers and educators in planning learning outcomes, delivering subject content effectively to the students, and tracking students' learning and grading.

2) A keen and sincere student can take up courses in top Western universities at a low cost over the internet and be employment ready. Also, students can continuously reskill on the job, so that they remain relevant in the face of continuous technological changes impacting job profiles and job opportunities.

3) Every student deserves personal attention. Therefore, AI-based applications are specially designed to target the grey areas in an individual's understanding of a concept as well as its effective application. In fact, many of these apps can be supplied to the students on their smartphones and digital tablets to assist them with their daily studies.

e) ***Safety and Security***:

Managing police and fire personnel, checking the security of bridges, aeroplanes, ships, and railway lines, which require constant surveillance.

f) ***Communications***:

1) Going to destinations which are difficult to reach, going to places which contain the emission of harmful gases that are dangerous to human life.

2) Smooth management of the complexities of resolving urban traffic snarls.

3) To track unlawful assembly of rioting people and gather legal evidence, spot drug peddlers and their modus operandi, routinely patrol and keep under surveillance areas legally asked for, like the stored ballot, post elections and before counting.

4) Advise drivers to take up alternative safe routes for traffic resolution.

5) Powering the self-driving autonomous vehicles, robots, and drones. This has wide implications in society, jobs, climate control, and the world economy.

g) ***Restaurants and Cloud Kitchens***:

A restaurant in this system only exists on the internet and will only home deliver the food being ordered and paid for.

h) ***Environmental Protection***:

1) Round the clock monitoring of weather at various locations.

2) Surveillance for the protection of endangered species from poachers.

3) Constant lookout for species spreading contagious and dangerous diseases.

i) ***Maps and Traffic Control***:

Surveillance gives an idea of the congestion in traffic and alternative routes for quick travel.

j) ***e-Shopping***:

Ordering items in the respective apps and paying digitally.

k) ***Smart Homes and Automation***:

Working from home, studying from home, exercising from home, and the like.

l) ***Photographs***:

1) Interior and exterior of houses, eliminating the need for physically going to the site.

2) Capturing difficult and adventurous landscapes for video games scenery.

3) Surveying land and ocean for rescue operations.

m) ***Energy Management***:

1) Determining where most of the energy that is being consumed goes to; which sectors need it the most; what it is being used for; even the time of the day at which it is being used. The supply-demand predicting and balancing of energy can thus be effectively planned and controlled using AI.

2) Matching energy production to meet the demand is an art, as it cannot be stored on a large scale. AI-assisted large scale power generation, transmission, and distribution to customers are achieving just that.

n) ***e-Farming***:

1) Farmers can make informed decisions on how to utilise water, fertilisers, farming ambience, soil, and other resources effectively. AI captures the wisdom of successful farmers combined with scientific approaches and gives expert choices in a very personalised way.

2) Using robots to harvest the crop at the optimal time or perhaps use drones to spray insecticides to ensure crop health.

3) AI enables governments to optimally identify efficient cropping patterns, demand zones, and seasons as well as technological support systems that will maximise the returns for every farmer. Where needed, the financial insurance and support for contingency situations are predicted and effectively managed by AI-assisted software.

o) ***Healthy Rainforests***:

A huge variety of unique flora and fauna are very critical for control over global climate change. Complex AI-assisted weather modelling and prediction tools have been successfully used to enable effective and efficient conservation efforts in the rainforests.

Indeed, the benefits of effectively using these apps result in humans becoming versatile in those areas where they were individually unable to accomplish earlier. Therefore, it is very important for all citizens to be aware of these apps and also know how to use them safely and securely. The Indian Government has come up with many apps such as UMANG, BHIM, Swachh Bharat Abhiyaan, GST Rate Finder, m-Passport Seva, Online RTI, and MyGov, which are of use to the citizens of the country.

Risks Involved

These social media apps which sound so reasonable and helpful, *monetise in various ways*, an elaborate treatment of which is beyond the scope of this article. Briefly stated, the methods are: a) to advertise, *targeting the users to make purchases*; b) *pushing political agendas* for monetary gains; c) to encourage one to reveal one's own deep dark personal traits and *sell that information*; d) to propel one *to buy their client's offerings* through varied incentives; e) to propel one *to buy their subscriptions*; f) to propel one *to be active in one's groups* so that the group together achieves what the social media app is programmed to achieve; g) to form tribal communities where one can *passionately gang up or debate, decry and disrupt*.

The apps are so designed that the deepest psychological triggers within humans are kindled to *make the consumers come back repeatedly to use them*. This is very insidious and many users don't even recognise it. In fact, they exhibit withdrawal symptoms if a particular app is unavailable or if the internet service goes down. Further, the time thus spent is not available for fruitful purposes.

Selling user data leads to *data privacy loss*. Why is data privacy loss such a big thing? At the individual level, criminals misuse such information to gain access to, say one's bank account online, and siphon money off. They try all tricks to make one part with the password and other confidential data—called phishing—so that they can impersonate and steal. At the global level, these apps track every detail of behaviour to such an extent

that the app companies like the big six social media giants—Twitter, Facebook, Google, Apple, Microsoft or Amazon—can easily predict what an individual will do, what one will buy and when, and the like. In fact, they know much more about a person than himself or herself. It is like 'someone out there' knowing what one intends to do.

Children complain about mothers not paying enough attention to them after school because they are so engrossed with WhatsApp or Facebook. Grown-ups are deeply addicted to multiplayer online games like PUBG. And there are dangerous gaming applications like Blue Whale, which have been the cause of tragic deaths. While everyone is at home and sitting close to each other, each one is so disconnected from the other, but is connected to someone far away or is lost in one's own digital world—watching YouTube or playing games or catching up on gossip and fake news. What an irony!

Many apps are given away for free—but within them, they have many trojan 'payloads' or code embedded for advertisers who *steal all the personal data* irrespective of whether these data are related to the app or not. Many times, one glibly gives explicit permissions for these apps to access all kinds of unrelated information from one's mobiles. *Nothing comes for free.*

Safety in Using: What Does It Mean?

What does it mean to use these apps and especially social media apps safely? One may play with the fire but one should not get singed! We need to use information technologies very effectively but safely. There are specific guidelines to follow to enable us to do so. Any complacency can mean difficult times for us—either in recovering from losses or fixing up all loopholes that enabled this to happen.

There are several maladies: social media addictions or internet addiction; pornographic addictions; toxic online gossip and abusive behaviours: stress, tension and anxiety; and unwanted shopping binges. Many of these are medically recognised as behaviours needing medical interventions. Additionally, we need to beware of: (a) the pitfalls of digital colonisation of our minds—which is a modern form of erstwhile East India Company rule, and (b) data privacy loss. This is very critical for students and youngsters who are exposed to such sensual onslaughts without the requisite robust mental strength to be immune to its subtle effects. *So, safe living in the digital world demands that we become proficient in leveraging its benefits to accomplish our tasks efficiently while not becoming prisoners of its dark side*.

Apart from the phishing tactics mentioned earlier, there is also the malware software that creates havoc with the need for the continuous purchase of updated anti-virus software. And there is additionally the ransomware that targets small companies to extort ransom to be paid using perhaps 'bitcoins' or internet currency, for status-quo to be restored. Another problem is called identity theft wherein suddenly one will find that some impersonator would have hijacked all the identity proofs and boldly challenges one to prove one's identity.

How do we live safely in such a world? Like the real world having so many hostile and dangerous traps all around us, the digital world is filled with such minefields. It is only through keeping abreast of these dangers, being mindful, and applying one's wisdom, can one safely and happily derive the benefit of information technology.

The golden rule is simple: Use these apps transactionally inputting minimal personal data to achieve one's immediate legitimate needs and beyond that, consciously move out. Keep a safe distance from seductive offers to try out newer experiences like opportunities to share your opinions even as you read others. Some of the do's and

dont's of healthy usage of one's mobile phone as well as the apps in it include the following:

(a) Don't run away from the digital world. Like a deer in the forest that has tigers, we need to learn to thrive using these necessary apps but should never give them permissions for data sharing.

(b) Install, use, and delete Apps that demand that you give them all permissions. Never give away your identity and financial information. Many times, these are never needed. Do not forget that over a hundred Chinese Apps were banned by the Indian Government for national security concerns.

(c) Always be a master of your time and your execution plans. Set aside specific times of the day for using these apps to fulfil your needs. Within that scheme of daily planning, work hard to effectively use your apps to focus on and achieve your goals.

(d) Actively support all activities that uncover the ticking time-bombs with legal implications, embedded within these popular apps. The only way forward is to come up with appropriate laws and then to demand its enforcement as appropriate.

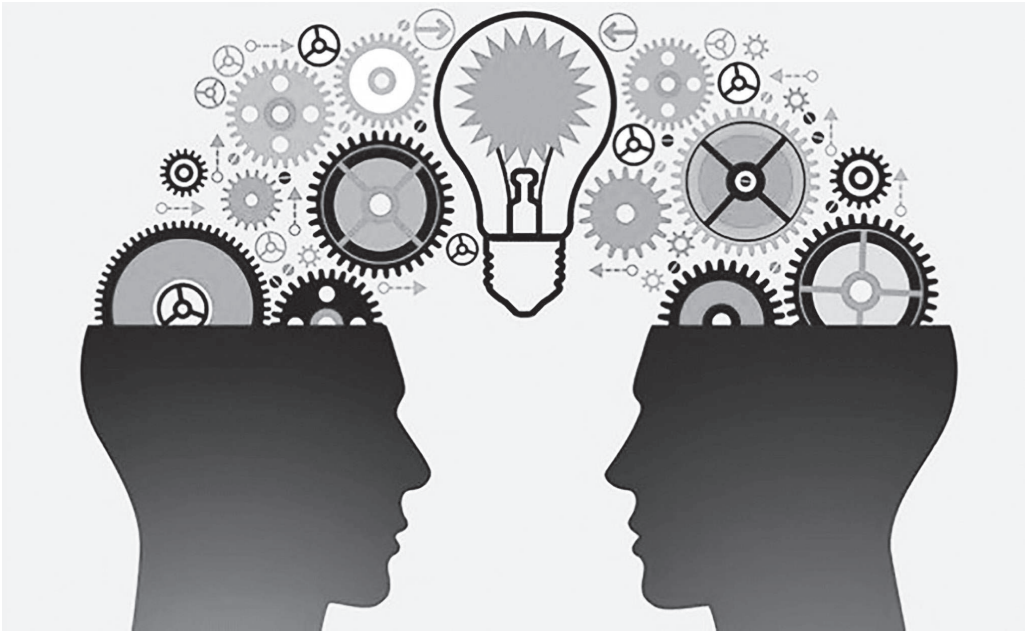
(e) Stop the notification sound which draws one to the smartphone. Every time you are drawn to use the smartphone for an 'important' need, try to say 'not now'. That will develop one's strength to resist the temptation to use the smartphone.

Every app or social media app will always have guidelines for its secure usage as well as general precautions to be taken—like changing passwords frequently or not using easily guessable words or dates in passwords, or two-level security. We should always enquire and become aware of such information from time to time.

The Bitter Truth and The Way Forward

There is another important issue with dependence on the dumb machine: we become dumb ourselves. People do understand the need for physical exercise; equally important it is to exercise the mind and intellect. Back in 1976 when there was an electric supply failure for a short time, the lady at the counter in Chicago failed to add up the cost of five items manually. However, seeing the figures from the opposite side I added them up and the lady accepted the figure to be correct. That which you do not exercise—be it the body, mind, or the intellect—fails us when they are needed most. Young Indian children can give the chapter number, verse number, and the full verse if they are given the first, or the second line, or even part of the verse of the scriptures. The mind has unimaginable powers and we surrender it all to the dumb machine. *How unfortunate, in the name of progress!*

One must have set before oneself the goal of life and an ideal to follow. Only such actions must be undertaken that takes us forward in this lifelong endeavour. For the spiritually minded, the internet provides a variety of links to devotional scriptures, chantings, video serials, webinars, zoom meetings, and pictures. Being rooted to these websites which strengthen our belief system is a good way to avoid the baneful influence of demeaning websites. One must have a definite routine for spiritual practices and into this time slot, the internet should be restricted from infringing. Some have suggested keeping a wristwatch in place of the smartphone for knowing the time. It is wise to avoid notification sound so that the mind is not drawn to it. As living in solitude is recommended strongly for spiritual aspirants, it is wise to set apart a major part of our time totally free from the influence of the smartphone, and to set definite times of the day and places, when and where alone our mind may be permitted to use the smartphone. We may occasionally and when needed use a smartphone but the smartphone should not use us. *We must outsmart the smartphone*. PB



Knowledge Revolution in the Digital Age—Human Knowledge at the Crossroads

Swami Atmapriyananda

1. Times of Transition?

That we are in 'times of transition' is a cliché that is current in our conversation in the modern age. As Dr Sarvepalli Radhakrishnan once humorously remarked, this phrase '*times of transition*' was perhaps uttered first by Adam in the Garden of Eden when he told Eve: 'We are in times of transition!' It is indeed true that we seem to be feeling that human knowledge is undergoing what is called in Physics as '*phase transition*'. The boundaries of knowledge seem to be breaking down, the borderlines getting blurred, different types of domain knowledge getting amalgamated. We appear to be back again to the ancient Indian vision of 'indivisibility (*akhandatva*) of knowledge'. Is it because the language through which human knowledge expresses itself is undergoing a sea change, that it has been deconstructed and digitalised? How is such a '*phase transition*' affecting the individual and collective psyche

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of humanity? These are some of the questions that have come to the forefront in this new '*Digital Age*'. This paper attempts to address some of these issues.

It is well known that human knowledge has progressed through the millennia based on the following three fundamental principles:

1. The Classification Principle,
2. The Generalisation Principle, and
3. The Unification Principle.

We will, for the purpose of this paper, focus on the first Principle: *Classification*. This could be on several parameters and criteria which get evolved as human knowledge grows over the millennia, thanks to cataclysmic changes and upheavals in human history. Classification of human beings as 'generations' is a trend that emerged in recent history in the wake of the two devastating World Wars that threw up unprecedented challenges and quickly redefined human aspirations. A new pattern of classification of human beings emerged with special names: Generation X, Generation Y, Generation Z, and Generation Alpha. Some of the definitions and descriptions on this Gen classification as X, Y, Z, and related matters form a fascinating new story in modern times and we discuss some of these in this paper drawing largely from the descriptions found in the modern virtual teacher in the 'Digital Age'—the new near-omniscient avatar, Mr Google!

2. The Three Generations: Gen X, Gen Y, Gen Z

2.1. Generation X

By definition, Generation X includes those born between 1965 and 1981, during the reconstruction of Europe after the war. The lives of this generation have been tough and challenging, as the period of upheaval brought about a revolution in their outlook on life itself. There was just no time for idealism, philosophical woolgathering, reverie, and daydreaming. The harsh reality was staring at them in the face; hard work and production were the only philosophy they could swear by as it was a question of life and death—philosophical reverie was a luxury they could hardly afford. *Individualism*, *ambition*, and *addiction to work* were the 'values' they grew up with. They were forced to become workaholics compelled by the sheer urge to survive.

The parents of this generation had the worst hit: they lived through the post-war period. They are the Baby boomers—born between 1945 and 1964—so-called because they were born during the baby boom, the period in which the birth rate shot up in several Anglo-Saxon countries, above all the United States, Canada, and New Zealand, after the end of the Second World War.

The Parents had gone through the whole period of technological evolution and the rise and development of the media. They were enjoying stability in terms of both work and family, and were active both physically and mentally. Despite having adapted to a world Ver. 4.0, they are less dependent on smartphones and the internet than the next generations.

2.2. Generation Y

Generation Y is called the millennials. They are digital natives and the internet/smartphone revolution was shaped by the millennials or Gen Y. These digital natives, millennials are those born between 1982 and 1994 and they swear by technology as an inalienable part of their everyday lives. All their activities are, as it were, mediated by a screen. Though not really born into it, they migrated to the digital world from the analogue one in which they were living. However, the economic crisis and the

ever-increasing competition compelled them to be continually getting updated and better trained to get jobs that were becoming scarcer with the fierceness of the competition constantly on the rise. Unlike their parents, Generation X, these digital natives are said to feel a sense of nagging dissatisfaction urging them to set and wanting to achieve their own goals. The general classification has been harsh towards this millennial generation labelling them as being lazy, narcissistic, and spoilt! In fact, in 2014, *Time* magazine labelled them as the *me-me-me* generation.

2.3. Generation Z

Generation Z or the post-millennial *generation* will be taking the lead in a couple of decades. Also labelled as centennials, for having been born into the world at the turn of the century—the oldest was born in 1995 and the youngest in 2010—they arrived with a tablet and a smartphone under their arms. Generation Z is a group of people heavily marked by the Internet. It is a part of their DNA: it storms into their homes, their education, their pattern of thought, and their way of socialising. And if Generation Y has difficulty finding a job, the situation for post-millennials is even worse. Why so?

Their mastery of technologies makes them neglect their interpersonal relationships to a large extent, but they are also the ones who give more of a voice to social causes on the Internet. They like to get everything they want immediately, a fact fostered by the digital world in which they are immersed, and their lifestyle is also influenced by *YouTubers*. They multi-task, but their attention span is limited. They are independent and demanding consumers and will have jobs that perhaps do not yet exist in today's world!

This leads immediately to an important question: *Which are the professions of the future?*

2.4. The Fourth Industrial Revolution—Its Impact

The Fourth Industrial Revolution is already having a profound impact on the labour market. Some professions will disappear while others will blossom and require new abilities and skills. People of the older generations will feel out of sorts with the conversations among the Gen Z boys and girls: an AI expert (AI = Artificial Intelligence) talking to a brilliant ML expert (ML = Machine Learning) when a Robotics Engineer comes in to join the conversation. They are joined soon by Nanotechnology experts, others well acquainted with 3D printing and genetic engineering. People of an older generation looking on and listening to this conversation will feel it is all Greek and Latin: the frequently mentioned phrases like— strong algorithms, deep learning, software design, cloud technology, e-commerce, web positioning, digital imaging, digital data analytics, big data analytics, Internet of Things (IoT)—all will perhaps make them feel that this Gen Z belongs to a different species altogether, coming as it were from a different planet!

These are the professionals of the Fourth Industrial Revolution, natives with digital skills who are playing the lead roles in the transformation of production systems and business models. The labour market demands digital skills and workers who are not only fluent in other languages or their academic speciality, but also in the essential tools to deal with expertise in the technological age. Here we mean knowledge regarding electronic devices, networks, cybersecurity, communications systems, and data analysis, among other things. Smart Homes are fast becoming a reality. The TV, fridge, and even your coffee maker will be smart appliances. Virtual assistants will operate them according to your orders, helping you in many of the day-to-day tasks. Change is here

and it will become an inevitable part of your daily reality in a decade.

You wake up, walk to the living room and ask your virtual assistant to turn on the radio. The radio knows that you like to tune in to the sports station on Mondays at 08:00 am to listen to the results of the weekend matches. The radio notifies you about a traffic accident that will delay you on your way to work with a warning message without any command. When you sit in your car, your GPS will have already calculated a quicker alternative route.

This is not fiction; it is the future—an almost immediate future. Home appliances with sensors and communication systems to exchange their data are now in every corner of our homes, which is becoming increasingly connected: home automation, entertainment, energy efficiency, security, comfort, daily tasks, and so on. It is the Internet of Things, a new reality in which all objects will gather and exchange information, generating a new universe of services for citizens.

2.5. The Human Side of Gen Z, the Digital Age Youngsters

The Gen Z people have remarkable skills of thus working in a coordinated fashion in such a smart environment, that is, a fusion between industry and the Internet. This multidisciplinary coordination greatly increases the effect on efficiency, flexibility, and productivity. However, it should be emphasised that it is not simply a question of technical skills that they develop and utilise. Interestingly, the most sought-after abilities and skills in the 21st century are qualities that are typically human, like *solving complex problems with a humane approach*.

Some of these so-called 'soft skills' are perhaps the secular version of what the Bhagavadgita calls the *sattvika* qualities and some of the divine qualities (*daivi sampad*) in the sixteenth chapter. For example, we may emphasise three of them from the sixteenth chapter of the Gita, namely, *mārdavam, hri, achāpalam* (Gita, 16.2)—gentleness, modesty, steadiness (lit. lack of fickleness) respectively. The famous management book *From Good to Great* by Jim Collins calls the highest in the hierarchy of leaders called the L5 leader, is the one who combines harmoniously the qualities of '*will*' and '*humility*'. This book revolutionised management thinking in recent times as no other book did. A few excerpts from an article based on this remarkable book that vindicates the ancient Indian thinking of a *sattvika* leader in tune with the Gita-teaching of *guna-traya* (the three qualities—*sattvika, rajasika, tamasika*), are being presented below:

> **Humility + Will = Level 5**: Level 5 leaders are a study in duality: modest and willful, shy and fearless. To grasp this concept, consider Abraham Lincoln, who never let his ego get in the way of his ambition to create an enduring great nation. Author Henry Adams called him 'a quiet, peaceful, shy figure.' But those who thought Lincoln's understated manner signalled weakness in the man found themselves terribly mistaken—to the scale of 250,000 Confederate and 360,000 Union lives, including Lincoln's own.
>
> **Level 5 Leadership: The Triumph of Humility and Fierce Resolve**: What catapults a company from merely good to truly great? A five-year research project searched for the answer to that question, and its discoveries ought to change the way we think about leadership. The most powerfully transformative executives possess a paradoxical mixture of *personal humility and professional will*. They are timid and ferocious, shy and fearless. They are rare—and unstoppable.[1]

The much talked about 'soft power' in modern times which is capable of conquering the

'hard power', making a huge paradigm shift in human thought, in the evolution of human knowledge. It also points to these *sattvika* qualities. Softness and gentleness that are firm and fierce always triumph over toughness and harshness that are threatening and dangerous. It is interesting how knowledge has come a full circle—the ancient Indian *triguṇa* idea of the three qualities based on the Sankhya-Vedanta philosophy is being re-discovered by Western Management science. The buzz words that have come into management vocabulary like emotional intelligence, emotional quotient, and the like obviously have their roots in the Indian philosophical and spiritual thought. The discovery of 'multiple intelligences' could be traced to the *Taittiriya Upanishad* description of the *pancha kosha*s , five sheaths—*annamaya, prāṇamaya, manomaya, vijñānamaya, ānandamaya*—all of them having their own 'intelligences' or *chetanā*. In fact, each of them is called *ātmā* in the original Upanishadic text showing that each is an 'autonomous self' with self-governing laws of its own.

3. Knowledge Without Boundaries—Seamless and 'Nomadic'

The 'Digital Age' has only proved beyond doubt what the Indian Knowledge Tradition (*Bhāratiya Jñāna Paramparā*) has emphasised over the millennia: Knowledge is without boundaries and seamless. Further, it has forcefully brought this into the action-packed real world. Indian thought had always emphasised two streams: Knowledge and Action, *jñāna* and *karma*. The famous reply that Bhagavan Sri Krishna gave in response to Arjuna's question on which one is superior, knowledge or action, may be recalled in this context: 'In the days of yore, I spoke about two kinds of paths (steadfastness in pursuit): the Yoga of Knowledge and the Yoga of Action.' (Gita, 3.3). These two paths came to be described later on as *jñāna-yoga* and *karma-yoga*. This vision leads us to the understanding of life itself. If we define and understand life as a dynamic interaction between the self, the living being (*jīva*) and the world (*jagat*) that is perceived by the self, then we might ask: since interaction means giving and receiving, what is it that the *jīva* gives to and receives from the *jagat* and conversely, what is it that the *jagat* gives to and receives from the *jīva*? *Jīva* gives action to the world and receives knowledge in return through experience. Conversely, *jagat* receives action from the *jīva* and gives back knowledge.

A living being's entire life is determined by these two things: *jñāna* (knowledge) and *karma* (action). Religions that believe in re-birth (*punar-janma*), often called the afterlife or the life hereafter, like Hinduism, contend that the afterlife or a *jīva*'s next *janma* (re-incarnation in the next life) is determined by the *jīva*'s accumulated store of *karma* (action) and *jñāna* (knowledge) at the end of the present life. The *shruti pramāṇa*, (Upanishadic) testimony, in this context is the statement in the *Katha Upanishad* (verse 2.2.7): 'Some *jīva*s (*dehinah*) go into wombs to be embodied, while others pass into the immovable, according to their karma and according to their knowledge.' The important phrase here is: 'according to their *karma* (action) and according to their *jñāna* (knowledge)'. Sri Shankaracharya, in his commentary on this verse says:

> The meaning is that the *jīva*s having a body enter the womb. Others, yet inferior after death, become immovable, such as trees and the rest; 'according to their *karma*', means according to *karma* performed by them, that is, by the form of *karma* performed by them, in this birth. Similarly also, 'according to their knowledge', that is, according to the nature of knowledge acquired by them. The meaning is that they take a body corresponding to them; for, another *shruti* says 'they are born according to their knowledge' (*Aitareya Aranyaka* 2.3.2.).

Action (*karma*) is governed and regulated by knowledge. Hence, knowledge is the most powerful instrument if any positive transformation is to be wrought in society. The present-day society has been recognised as '*Knowledge Society*' and it is being increasingly felt that the barriers in knowledge should be broken and knowledge made free of its shackles and boundaries. Rabindranath Tagore's vision of an awakened India leading to global awakening is worth remembering in this context:

> Where the mind is without fear and the head is held high,
>
> Where knowledge is free,
>
> Where the world has not been broken up into fragments by narrow domestic walls,
>
> Where words come out from the depths of truth,
>
> Where tireless striving stretches its arms towards perfection,
>
> Where the clear stream of reason has not lost its way into the dreary desert sand of dead habit,
>
> Where the mind is led forward by thee into ever-widening thought and action,
>
> Into that heaven of freedom, my Father, let my country awake.[2]

Inter-disciplinary and cross-disciplinary approaches that have become buzz words in the field of education and cultivation of knowledge are but a revival in modern times of the vision of unified knowledge, unbroken and integrated (*akhanda, advaita*), of the ancient Indian Rishis. The Upanishadic idea that both *parā-vidyā* (higher Knowledge) and *aparā-vidyā* (lower knowledge) are equally necessary to be cultivated, appears to be getting revived in a powerful way in the field of knowledge all over the world. The coinage of the phrase *'knowmad'* and the newer meanings assigned to the old words like 'nerd' and 'geek' are the proofs of the power of knowledge in the emerging 'Knowledge Society'. The digital age has ignited this transformation more than anything else.

Google gives the following meaning of the words 'nerd' and 'geek': 'A *nerd* is someone who is passionate about learning/being smart/academia. A *geek* is someone who is passionate about some particular area or subject, often an obscure or difficult one.' Mad pursuit of knowledge was *the* trend among scholars and saints in ancient India, and they were highly honoured and respected by kings for their passion for knowledge. The kings not only gave them handsome gifts but also gave them pride of place in their courts, treated them with such respect that surpassed even the status given to the ministers and administrators in power. There is an ancient popular Sanskrit verse recited and memorised by all children learning Sanskrit at the primary level which says: 'While a king is honoured in his own kingdom alone, a man of knowledge and wisdom is worshipped everywhere, in all places and in all times.' This is true even in the modern age.

The glorious example in the present age is that of Srinivasa Ramanujan, the mathematical genius that India produced. Within his very short life of just 32 years from December 1897 to April 1920, without any formal training in pure mathematics, he made such substantial contributions to several areas of mathematics including providing solutions to mathematical problems then considered unsolvable. His passionate absorption in pure mathematics in isolation could hardly be grasped by some of the giant mathematicians of his time, as they found his work to be 'too novel, too unfamiliar, and additionally presented in unusual ways'. This made him completely neglect all other subjects during his study at school so much so that he failed the school final examination.

It was to the eternal credit of Prof. G H Hardy at the University of Cambridge that Ramanujan came to be discovered and gifted to the world of mathematics publicly. Hardy stated that a single look was enough to show Ramanujan's works were of the same class as those of mathematical geniuses such as Euler and Jacobi. Prof. Hardy vehemently pleaded the case of Ramanujan when his name was proposed for the award of the Fellowship of the Royal Society of London. Ramanujan became one of the youngest Fellows of the Royal Society and only the second Indian member, and the first Indian to be elected a Fellow of Trinity College, Cambridge. Curiously, being a deeply religious and devout Hindu, Ramanujan credited his substantial mathematical capabilities to the Divine Source, and said that the mathematical knowledge he displayed was revealed to him by his family Deity, Goddess, the Divine Mother Namagiri Thayar. He once said: 'An equation for me has no meaning unless it expresses a thought of God.' It is said that his mentor Prof. Hardy hearing these remarks about Ramanujan's claims of the divine origin of his extraordinary mathematical prowess, commented jocularly and perhaps rather sarcastically: 'This boy is undoubtedly a brilliant mathematical genius, but hopelessly religious!'

4. Paradigm Shift in the Digital Age—Creation of 'Knowmads'

'The world belongs to nerds, geeks, makers, dreamers, and *knowmads*'—this is the title of a beautiful article that John Moravec wrote in 2018, wherein he systematically develops the idea. This is a special and important gift that the 'Digital Age' has given to the present generation—the creation and the urgent necessity to create groups of '*knowmads*' who are a different species of 'knowledge workers' and 'knowledge seekers' who are seamless, unrestricted, open and free, capable of and enjoying swimming courageously on a voyage over an unchartered sea. John Moravec defines these 'knowmads' as follows:

> A *knowmad* is what I term a nomadic knowledge worker—that is, a creative, imaginative, and innovative person who can work with almost anybody, anytime, and anywhere. Industrial society is giving way to knowledge and innovation work. Whereas industrialisation required people to settle in one place to perform a very specific role or function, the jobs associated with knowledge and information workers have become much less specific in regard to task and place. Moreover, technologies allow for these new paradigm workers to work either at a specific place, virtually, or any blended combination. Knowmads can instantly reconfigure and recontextualise their work environments, and greater mobility is creating new opportunities.[3]

We may recall in this context the earliest instruction given by Sri Ramakrishna to his holy spouse Sri Sarada Devi, who was a helpmate in the divine mission of the Avatar, as Sri Ramakrishna is well known in the modern age. Sri Ramakrishna said in Bengali: '*Jekhāne jemon sekhāne temon, jokhon jemon tokhon temon, jāke jemon tāke temon*', which means: '[Adjust yourself seamlessly] to whatever place you need to stay and work in, to whatever time or situation you are in, to whomsoever you need to interact and work with.' John Moravec's above-quoted definition of a knowmad as 'a creative, imaginative, and innovative person who can work with almost anybody, anytime, and anywhere' appears to be an echo of what Sri Ramakrishna taught in one of his earliest instructions to Sri Sarada Devi. *Vulnerability and flexibility of thought and the ease of navigation and movement in action are products of the unique knowledge revolution in the 'Digital Age'*.

The gist of John Moravec's thesis, a paradigm shift in the 'Digital Age' is the creation of 'knowmads', the free and happy navigators

in their voyage in the unchartered sea of knowledge and its application. Knowmads are present in all walks of life and not necessarily in any formal organisation. A knowmad's mobility is tied to how he or she applies his or her knowledge. Knowmads are not merely performing their *jobs*, but they *work* with a different motivation. While *jobs* are positions, mere forms of employment, *work* is a long term in scope, and relates to the creation of meaningful outcomes. Knowmads clearly distinguish *work* from a career and in the 'knowmad' society, the perception is clear that whereas a career is something that 'carries' a person throughout life, an individual's work is a collection of activities that are backed with elements that are purposive at the personal level. John Moravec further states:

> Knowmad-powered organisations are built around knowledge, not information. Knowledge exists at the personal level, comprised of tacit and explicit elements. Explicit elements can be conveyed as information, i.e., as things you can read in a book or through observation. Tacit elements are developed through experience, trying things out, or experimentation—like learning how to ride a bicycle. Combining these two elements of knowledge together forms one's *personal knowledge*—and this most fundamental level of knowing is what makes a knowmad stand out. To remain competitive, knowmads must continuously learn, unlearn, and refine what they know. Because knowledge is personal, organisations cannot manage it. They can, however, attend to the expansion of the ecology of knowledge among their employees and members. For managers, this requires creating a blend of chaos and order (*chaordia*) and placing trust in all actors of the organisation to co-lead in its evolution.
>
> ***What this means*:** The emergence of a knowmad society requires new mindsets that encourage greater leadership from all stakeholders—at personal, organisational, and policy levels. This is more than an attitude that is supportive of knowmads, but requires a fundamental cultural transformation to embrace these new approaches to the purposive use of individual knowledge together with strong social supports to help each of us maximise our potential without fear of failure.[4]

5. Creative Thinking and Multiple Intelligences

The phrases 'creative thinking' and 'emotional intelligence' have come to be used during the Digital Age, marking, once again, a paradigm shift from mere efficiency-driven, output-oriented, and production-obsessed approach of the industrial age. It is of interest to note that these very ideas were the common core values in ancient Indian knowledge society. In the Upanishadic age for example, when the kings took a keen interest in promoting knowledge cultivation and propagation. Critical thinking, investigative approach, and the spirit of constant inquiry with an eagerness to explore—were the hallmarks of the cultivation of higher Vedantic knowledge in the various schools of knowledge (*gurukula*s) run by the Rishis of yore.

As cases in point could be mentioned, the commencement of the two great treatises on Dharma and on Vedanta, the Jaimini's *Dharma-sutras* (aphorisms on Dharma) and Vyasa's *Vedanta-sutras* (aphorisms on Vedanta): *athāto dharma-jijñāsa* and *athāto brahma-jijñāsa*, meaning respectively, 'Now therefore [commences] the inquiry into Dharma' and 'Now therefore [commences] the inquiry into Brahman (the Infinite Supreme Reality)'. Inquiries were initiated; curiosity was aroused in the minds of the disciples; critical thinking was encouraged to undertake an open-ended research; and free exploration was promoted, wherein the shackles of preconceived notions, bias, and prejudice had absolutely no place—'where knowledge is free',

as Rabindranath Tagore wrote. Upanishads are glorious examples of such critical thinking, free exploration, and unshackled investigative research.

Swami Vivekananda, therefore, said that Vedanta will be the future religion of all rational, and thinking humanity. Upanishads also spoke about 'multiple intelligences' in their wonderful inward journey to explore the five-layered human personality—*annamaya, prāṇamaya, manomaya, vijñānamaya, ānandamaya* selves. Each of these is called *ātmā* or self, meaning thereby that each layer is an autonomous self with self-governing laws of its own. Each self has an intelligence of its own and each is pervaded, permeated, and enveloped by that which is more interior. The modern idea of 'emotional intelligence' in the 'Digital Age' is but a one-fifth part, echoing the inward investigation undertaken and documented in the *Taittiriya Upanishad* that reveals the idea of multiple intelligences at five levels of human consciousness.

6. Conclusion

We began this essay by talking about the various generations. Now, as for the current generation, those born after 2010, they have been termed the 'Alpha' generation. What will their behaviour be like? In a couple of years, they will turn teenagers and it will be interesting to watch what impact the 'Digital Age' paradigm shift discussed above and the resulting sweeping changes will have on this generation. Whatever be the impact, one thing is clear: The Eternal Wisdom Tradition of India (*Bhāratīya Sanātana Jñāna Paramparā*) is being rediscovered, revivified and rejuvenated through a journey that traces back to its perennial springs. New meaning is emerging from the ancient scriptures as Swami Vivekananda said. This was the immense challenge that Swamiji took upon himself in the modern age and as a fitting finale to this essay, we may recall his prophetic words defining what he called his 'life's work':

> To put the Hindu ideas into English and then make out of dry philosophy and intricate mythology and queer startling psychology, a religion which shall be easy, simple, popular, and at the same time meet the requirement of the highest minds—is a task only those can understand who have attempted it. The dry, abstract Advaita must become living—poetic—in everyday life; out of hopelessly intricate mythology must come concrete moral forms; and out of bewildering Yogi-ism must come the most scientific and practical psychology—and all this must be put in a form so that a child may grasp it. That is my life's work.[5]

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Our Virtual Problem — and Its Organic Solutions

Pravrajika Brahmaprana

In every age a country ushers in its own novel inventions along with its unique challenges. But today, the 21st century has ushered in a *global* digital age, along with its *worldwide* challenges. What are those challenges? This article will investigate how the digital age on a large scale has affected Americans' health at every level—physically, emotionally, intellectually, and spiritually. And then it will explore emerging, novel, and somewhat organic remedies, along with age-old practices, that can allow us as spiritual seekers to live—and, yes, thrive—in a digital world of our own making, with healthy boundaries and safety nets.

The Problem

It is hard to imagine that American millennials (born between 1981–94) and iGen (born 1995–) never experienced a time when smartphones and social media were not pervasive. Therefore, it's not surprising that since 2011 there has been a corresponding spike in depression and anxiety among young people—even feelings of being disconnected and isolated by many who paradoxically have a large number of Facebook friends.[1] Why? Because, as some psychologists suggest, the younger generation often forfeit face-to-face communication with postings and interactions on social media.[2] Furthermore, Dr Jean Twenge, a psychology professor at San Diego State University, observed her students' addictive relationships with their smartphones. One student shockingly admitted: '*I think we like our phones more than we like actual people*.'[3] From her observations and research, Twenge concluded: 'It's not an exaggeration to describe iGen being on the brink of the worst mental health crisis in decades. Much of this deterioration can be traced to their phones.'[4]

Other mental and emotional health issues arising from our digital world come from the speed of change in our news cycles—with more and more pop-up ads and video clips exhibited on our virtual news sources. This affects all generations. We suffer from a glut of online distractions, and the result is overstimulation and a tendency to try to multitask in order to keep up with our ever-increasing pace of life. Just imagine, the amount of stimulus walking down a city street today—the sights, sounds, and smells—is several hundred times more than 300 years ago. Is it any wonder that in 1980, the American Psychiatric Association finally recognised ADD (attention-deficit disorder) in its *Diagnostic and Statistical Manual of Mental Disorders* (DSM). Between 1997 and 2016, its numbers are growing, and scientists are trying to understand why. Some point to our increased use of electronics and decreased hours of sleep in today's digital world.

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Other researchers would claim the Internet has had an equally negative impact on our intellect. In Nicholas Carr's book *The Shallows: What the Internet Is Doing to Our Brain*, the author argues that our increased reliance on gathering readymade information from the Internet is impeding our ability to concentrate, develop critical thinking skills, and generate the capacity to reflect deeply. Drs. Mark Dennis and Andrew O Fort, at Texas Christian University in Fort Worth, Texas — both noticed this disturbing trend among their students and recently developed Contemplative Studies, a unique educational programme within the university's curriculum to counter it, which we will shortly examine in this paper.[5]

It stands to reason that when our physical, emotional, and intellectual well-being are impacted, so also is our spiritual development. Today young and old aspirants who arrive at our Vedanta centres, often complain how difficult it is for them to concentrate—especially after working all day in IT professions. And yet when we observe their behaviour, we find that too many carry their iPhones into our temples and cannot resist checking their messages and texting—even during a spiritual talk or puja. So, what is the solution?

The Solutions: Physical, Psychological, Cognitive, and Contemplative Holistic Wellness Antidotes

In February 2019, I attended a conference on 'Holistic Wellness', in the Dallas-Fort Worth metroplex, which addressed the problems we face in today's digital world. Farah Gilani, LPC-S, NCC, therapist and educator, introduced to her audience of mental health professionals, academics, and spiritual leaders a surprising new malady that has arisen in recent years in America: *Nature Deficit Disorder*. Gilani explained that some doctors today actually prescribe 'nature' to counterbalance the psychological, physical, and cognitive abilities that we are losing due to our ever-increasing human separation from nature, which many psychologists suggest is in part due to our indoor preoccupation with electronic devices. Some studies have found that a 90-minute walk in nature decreases rumination, lowers blood pressure, and reduces ADHD (attention-deficit/hyperactive disorder) symptoms, patients' stress levels, and anxiety. But, interestingly, a 90-minute walk in an urban environment has no such results.

Gilani also pointed out obvious psychological facts—when we connect with others *in person*, we thrive emotionally; and when we strive to connect with activities that cultivate mental growth, maintain our curiosity, and encourage us to share, we grow intellectually. What is disturbing is that we, as a 21st-century culture, have become so estranged from these basic needs that we must be reminded of them.

A Cognitive Prescription

At this same conference, Leanne Young, PhD and Executive Director of the Brain Performance Institute at the University of Texas in Dallas, shared a number of informative studies on how to make our brain healthier.

1. For example, deep sleep is healthy because the brain actually processes information in sleep.
2. And if we can couple our deep sleep habit with giving our mind an opportunity to think deeply 30–60 minutes, twice a day, about something that requires critical, deep, reflective thought, we can also increase our brain health.
3. Dr Young stressed how important it is to do one thing at a time rather than trying to multi-task, because the fact is: 7–9 parts of the brain are involved in changing any *one*

mental task. In other words, the human brain is not hardwired to concentrate while multi-tasking.

4. Young also shared a fact that stunned her audience: the nature of the smartphone is so addictive that just having a phone in the room decreases one's IQ—even when the phone is turned off!
5. Finally, she provided a mental health prescription for the average person today: we can all restore our brain's rest by trying to take five 5–minutes' mindfulness breaks a day.

Transformative Effects of Contemplative Studies in Higher Education

To counter the negative effects of the digital world within today's higher learning, mindfulness and meditation practices have entered some universities' religious studies curricula. Drs. Mark Dennis and Andrew O Fort explained that 'American universities such as Brown, Virginia, and Wisconsin have well-established Contemplative Studies programs with substantial budgets and associated faculty, while others like TCU [Texas Christian University] have programs in earlier stages of development'.[6] How do such programs work?

Contemplative study and practice at TCU is a fourfold programme. First, in the words of Dennis and Fort: 'Contemplative Studies offer a way to use the mind, the very thing that binds us, to investigate itself and thereby slowly free itself from the negative states we all experience, whether anger, greed, and delusion.'[7] In other words, Contemplative Studies do not use just the common third-person style of education through class lectures. Rather, it includes a first and second-person pedagogy of personal experience and group sharing coupled with deep listening. In this way, the student *embodies* and is *present* in his or her own experience of what is being taught and thereby retains a more reflective and deeper level of knowledge.

For example, Dennis and Fort introduced in their classrooms experiential 1st person mindfulness practices from Asian religions, such as attending to the present moment, breath awareness, mindfulness meditations (such as observing one's own thoughts and emotions, self-enquiry, and yogic postures) or mindfulness techniques unrelated to Asian religions, such as taking a mindful walk (identifying sounds one hears, cracks in the pavement, faces of passers-by, etc.) and then journaling the experience to make a deeper impression and insight. These practices allow the students to experience within themselves how they can cultivate their minds to critically inquire and investigate, concentrate and deeply reflect, which collectively alter how they experience themselves. In this way, it is transformative.

Second, it offers digital awareness exercises that allow the students to directly experience how the digital world affects their ability to concentrate, engage in critical enquiry, and deep thinking. In fact, at the end of their interactive course study, when students were asked: 'If you had an addiction, what would it be?' 'Facebook' was their reply.

Additionally, Contemplative Studies programs give the students mental tools that can help them face and overcome their own personal negative states of mind.

And fourth, Contemplative Studies and its model of higher education introduces students to ways of investigating their own sense of spirituality, what it means to be human, what is the real nature of the self, and what is reality.

Vedanta's Four-Yoga Solution

Many young aspirants who cannot sit through a one-hour spiritual talk, love to attend the

Vedanta centres' karma yoga days. Why? Engaging in physical activity is a very useful tool in focusing a scattered or hyperactive mind—especially in today's digital world. The mind naturally becomes tied to the outward action—sometimes by willing and, thereby, leading the action, and sometimes by just following the action. As we engage with our work, we begin to reflect on *how to improve our actions*. And, over time with repeated practise, we then strive to develop *concentration* and *skill in action*. Then later, as we develop inwardly greater self-awareness, our aspiration deepens and we strive to attain *selflessness* and a *prayerful* or *detached attitude* in and through our work.

Our work teaches us about our self—how we feel about our self: 'Do I respect my work? Or do I try to cut corners while I work? Do I try to work selflessly, or do I crave recognition for what I do?' In this way, we begin to learn about our self, because the outer act reveals the inner motive. In this way, the field of action becomes our teacher.

In the spiritual life, karma yoga is one of the paths that allows one to develop as a *jnani*, the Witness of all action; or as a *raja yogi*, mindful that God is the Doer and I am the instrument; or as a *bhakta*, who surrenders all actions to the chosen ideal. The act of surrender instantly alters the character of a devotee's actions and, in the process, transforms the devotee.

Karma Yoga in Jnana Yoga

The jnani uses discrimination to throw off negative states of mind by realising that this world—both natural and virtual—is a dream. A jnani refuses to get caught up in this dreamlike waking state by any attachment, aversion, or addiction. Though the consciousness in which addictive and distracted states of mind appear remains untainted, the concentrated consciousness the aspirant wishes to develop in order to attain that state of higher consciousness may be at first confused and unfocused—an obstacle that impedes discrimination, concentration, and deeper insight.

So, a sincere aspirant may start by self-regulating any outer behaviours that appear to agitate the mind—such as excessive screen time on the Internet, television, or smartphone. As our mind responds by quieting down, we then feel clear-minded enough to remind ourselves as often as possible to remain the witness of *all* mental and physical activities. This practice consciously positions our higher mind as an overseer of the lower mind—a mental stance that empowers us as an onlooker—aloof and detached from all forms of attachment and addiction-forming *vrittis* that take place in the lower mind. This witness stance of the higher mind also trains us to objectively view the drama of the outer world. As raja yogis, we don't react to what we observe; we choose to remain the Witness.

That practice is the springboard for the jnani's deeper practise of karma yoga. Knowing 'I am the Self', the jnani knows he or she *never acts*, so there is no work to surrender or renounce. Swami Vivekananda explained this

spirit of a jnani's approach to karma yoga: 'Work constantly; work, but be not attached; be not caught. Reserve unto yourself the power of detaching yourself from everything, however beloved, however much the soul might yearn for it.'[8] By detaching ourselves from outer attractions and inner cravings, we, as aspiring jnanis, become more intimately drawn to the Self, until eventually we remain established in the Self.

Free from activity, the jnani becomes the Knower of the field, which is the body-mind complex. Sri Krishna described that state of consciousness in the Bhagavadgita, 4.18: 'He who sees the inaction that is in action, and the action that is in inaction, is wise indeed.'[9] In other words, jnanis who are established in the Self know they *never act*, so there is no work to surrender or renounce. Swami Asheshananda, a disciple of Sri Sarada Devi, once explained this realisation: 'The jnani knows that it's his *prakriti* that is acting.' Swami Prabhavananda further explained this attitude in his Gita commentary: 'Knowing oneself to be the Atman united with Brahman, one has no sense of being the doer of actions but knows instead that it is the gunas that act. In this state, one becomes the witness of all actions proceeding from oneself, whether physical or mental.'[10]

The knower of Brahman transcends the three gunas—including *sattva*. Sri Krishna states in Gita 13.14: 'Doing the tasks of each sense, yet Himself devoid of the senses; standing apart, He sustains; He is free from the gunas but feels them.'[11] Again, Swami Prabhavananda explained in his Gita commentary:

> In this passage Sri Krishna conveys a beautiful meditation. Brahman is the witness of the function of the gunas. Because of his presence within us, our senses are active. We cannot blink our eyes without that presence; yet we think we are independent of God. That is why the purpose of spiritual practice is to renounce the ego, which hides the divine presence. We must strive to feel that reality behind our five senses. God is! With every breath, we must strive to feel that without him we cannot breathe. As Swami Vivekananda exhorted: '*Do not seek for Him, just see Him*.'[12]

To reflect upon this even for just a moment brings a sense of immediate peace and a joy-filled focus to one's life.

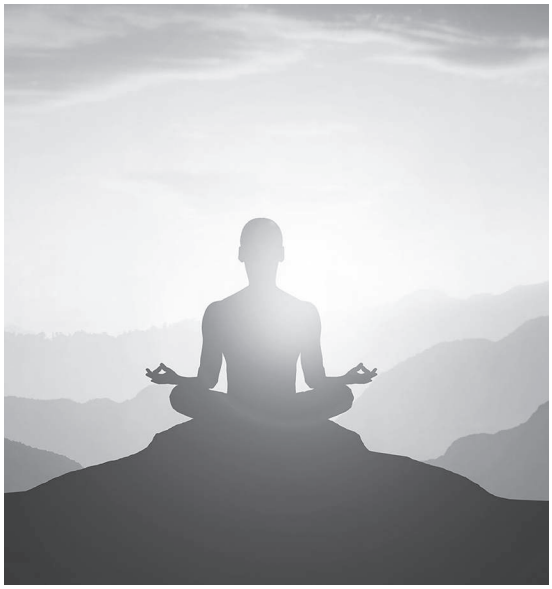
Karma Yoga in Raja Yoga

In raja yoga, we can use our awareness to keep watch over the mind and safeguard ourselves against losing a mindful balance. Swami Vivekananda gave a mindfulness meditation in his raja yoga classes, which is helpful to undertake in a 5-minutes' break throughout the day or at the beginning of our daily concentrative meditation. How? When we watch the mind, the mind, in turn, becomes embarrassed, as it were, and slows down. Then we are able to gather the forces of the mind and turn them inward to the heart centre.

In 'Six Lessons of Raja Yoga', Vivekananda led his students into a mindfulness meditation. He said:

> Picture the mind as a calm lake stretched before you and the thoughts that come and go as bubbles rising and breaking on its surface. Make no effort to control the thoughts, but watch them and follow them in imagination as they float away. ... [See how those thought] circles widen out into ever-increasing circles. ... Hold to the idea, 'I am not the mind, I see that I am thinking, I am watching my mind act.'[13]

An audible guided meditation such as this guides the mind to follow its instructions. Vivekananda then explained: 'When this is done, the mind is your servant to control as you will.'[14] As karma yoga, this mental effort is then offered up at the end of our completed meditation.



With mindfulness meditations, our teachers usually start with breath control—watching the breath, which calms the mind. The mind then becomes easier to focus on. And as we begin to watch the mind, we see how the mind becomes divided into a higher and a lower mind. The higher mind which watches the lower mind is the *buddhi*, which points to the Witness. With practice, we can then begin to reorient our Western sense of self to reside *not* in the brain, but in the buddhi which resides in the heart.

Since science tells us that that which we can perceive is matter, the meditator begins to understand firsthand that the mind is subtle matter—and then comes to the obvious realisation: 'I have a mind, but I am not the mind.' This is how such mindfulness meditations empower and stabilise the mind of aspirants practising raja yoga.

Mindfulness takes effort and is a means to concentration and meditation—not only in the shrine but also in the field of action. It is a means to attain skillfulness in action. Swami Vivekananda explained:

> The first step, the preliminary step, is called Kriya-Yoga. Literally, this means work, working towards Yoga. The organs are the horses, the mind is the rein, the intellect is the charioteer, the soul is the rider, and the body is the chariot. The master of the household, the King, the Self within, is sitting in this chariot. If the horses are very strong and do not obey the rein, if the charioteer, the intellect, does not know how to control the horses, then the chariot will come to grief. But if the organs, the horses, are well controlled, and if the rein, the mind, is well held in the hands of the charioteer, the intellect, the chariot reaches the goal.[15]

From Vivekananda's classic Upanishadic analogy of the body-mind complex, the rider is the *jivatma* (the awakened reflection of the supreme Self while in the world); the body is the chariot; the buddhi is the charioteer; the mind is the reins, and the sense organs are the horses. When raja yogis are inwardly connected to this spiritual paradigm, they can individually do the work of 25 men, as Vivekananda used to challenge his monks. Swami Turiyananda taught: 'When you serve do it with all your heart and attention. ... Work of such quality is equal to prayer and meditation.'[16]

By the same token, one day Swami Brahmananda wanted to test the depth of the young monks' morning meditations, and so he asked them to peel a potato and bring it to him. The swami held up the winning potato and declared that the peeler had the deepest meditation. Why? Young Swami Vishuddhananda had removed the skin of the potato so neatly that no flesh was wasted. This is karma yoga as a means to develop mindfulness, skill in action, non-attachment, concentration and meditation.[17]

Karma Yoga in Bhakti Yoga

Young devotees who return home after a long day at work often complain that their minds are

IMAGE: HTTPS://WWW.MCISLANGUAGES.COM

too distracted to meditate. What is the prescription? When the mind is unfocused, the easiest way to bring it under control is to perform a simple worship. We can go to the shrine in our home, light a candle, wave incense, offer flowers and some fruits, and that simple worship brings focus to our mind. The mind can more easily follow a physical activity than a mental regimen; so in that way, a simple worship at the day's end helps it to regain its spiritual balance.

Everything we do can become a worship, which we then offer or surrender to God. The secret is that the act of surrender itself makes us more conscious of our actions—we become more aware of what we are actually surrendering, whether a physical or mental offering. That is how we grow in our spiritual lives: when we become more engaged in our actions, we become more mentally focused.

Work as worship also involves surrendering the will—which means *actively* tying it to the *ishta*, our chosen deity. When we consciously adopt the attitude '*God alone is doer; I am the instrument*', our actions become framed, trained, and ultimately refined by this spiritual attitude. Surrender makes us single-minded in our actions. And when we become single-minded, there arises within us the joy of concentration. In this connection, Swami Brahmananda pointed out: 'Work, therefore, is a means to reach the stage of meditation.' He continued: 'Learn to work for the Lord instead of working for yourself. Know that you are worshipping the Lord through your work. If you can work with this attitude, work will not bind you; on the contrary, it will improve you in every way, physically, mentally, intellectually, morally, and spiritually.'[18]

Conclusion

Thus, we see how we can survive and even thrive in a digital world, if we are mindful of the challenges and safeguard ourselves against them. On the other hand, we can also use those very challenges to intensify our spiritual lives. They can incentivise us to hunger for peace, to re-immerse ourselves in nature, to allow mindfulness practices to enter our lives—whether a Vedanta aspirant, an atheist, or an adherent of any other religious tradition—and to learn to redirect all our acts as spiritual practices for our higher self-development.

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Emerging World and Emerging Problems

Swami Sunirmalananda

Children don't read books anymore, they say. Neither do elders. In the past, every literate person read books. Now, for many, books are redundant. What's there to read, after all? The hand-held mobile phone provides all the entertainment, knowledge, information, and the like, and that too, instantly. Ask anyone: how many books do you read in a week? Not one, perhaps? So books, especially printed books, are set to go. Books are gradually being forgotten. And so are magazines and other print forms of knowledge. One day paper books may disappear altogether and remain in the museum. Or they may be preserved in some libraries, if libraries continue to exist.

Schools still use books. However, writing using pen and paper is minimal, and house tasks or homework is largely done using the tablet—at least in the West. Students submit their homework online and teachers too instruct online. With the arrival of the pandemic, the entire system of education has changed. Studying from home using computers is the method adapted to the situation, which may not go away any soon.

This is the new education system, the developing method: the technological method of study. This has definitely come to stay. Children should have tablets now and have to study online, electronically. Apart from the tablet, children also use mobile phones. Why, because there is the need for communication. In Europe and the West, children use mobile phones, especially during the pandemic situation that is still lingering, so that teachers may contact them about lessons. Thus, the modern child is a master of the tablet and mobile phone. *Mastery brings in addiction too*.

IMAGE: HTTPS://WWW.PEXELS.COM

Then there are the games—the favourite pastime. Apart from watching cartoons on television and mobile phone, there are video

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games, PlayStation, for sport. They are so important for children that they have become prestige issues, and if anyone doesn't own a PlayStation, he is considered poor. So there are rare instances where the child must beg, borrow, or even steal. Such is the attachment to gadgets.

Of all the latest gadgets, the mobile phone especially is something that everyone clings to. It is like poison ivy that sticks to wood, stone, and walls, and grows. This is especially true with children. About this addiction to gadgets, there was an idea that it was all temporary, because these gadgets being new, both children and elders cling to them. Once they become boring, the clinging will go. However, this theory doesn't seem to work because newer PlayStations and games are coming up every other day. Not to forget social media which is as addictive as gadgets, and that to a fault.

Apparently, there is no harm if someone switches on his or her video game or PlayStation. But there is intense harm if he or she can't switch these gadgets off. To play is okay but to know when to give up is strength. This doesn't happen and it has become the new headache. You must have the strength to switch on and switch off at will, but the will is controlled externally now. Our willpower to give up is weak. Incidentally, there have seen several cartoons recently to show how people behave during this mobile age, and about how people have become addicted to gadgets. If elders get addicted, it may be okay, but the youth and children are the greater concern. The greater concern is about children getting stuck to these instruments and never letting them go (see picture in page 42).

This article is about this situation.

Children as old as five years are mobile phone users now, in the West at least. And they won't give up the apparatus for any other thing. Nowadays, this is leading several parents to seek counselling also. The counsellors, parents, and the general public too are new to this odd situation. So what suggestions can they give? They cannot say anything. The old suggestions are of very little use now. What I mean is, the counsellor cannot advise as of old what the child should do and say: 'Go for books instead of the mobile or tablet. Read comic books, for example.' The reason is, we have already said that books will soon be a rarity and comics too are not so easy to get. Just like you don't find the Remington typewriter for sale nowadays, comic books, puranic comics, and the like also are not so easily available. Libraries? Yes, they too are disappearing quietly. The second counsel, 'Go and play outside with friends' too is not a piece of sensible advice because cities, especially in countries like India, are bursting at the seams. Where is the place to play? Where are playgrounds in this human jungle of dangerous vehicles? And where are the companions to play with? A third counsel, 'Talk to your father and mother' is also not sensible because—and here is the greater problem—parents are busy. The social custom of both parents working is really recent. It wasn't there in the past. The situation of both parents working was not possible even a hundred years ago. Now both earn. Both are busy and both think of their careers. This is a situation that needs attention.

If healthy families are important for society, this aspect has to be dealt with seriously and problems need to be solved. This is because the family doesn't mean a hotel where some young and old eat, watch television and go to sleep. *Family is a spiritual training place, a spiritual gym, and all the members are energised by the power of love.* Love is the current that runs in the family, and that love should be pure and unselfish. This cannot happen in namesake families. This situation has to be faced squarely,

in order to save the family. Weak families lead to weak citizens of the future. Weak citizens lead to tremendous evil.

Both parents sitting before their computers or busy in the office, and the child 'enjoying' life at the day-care centre or babysitter company, is apparently all right financially but is significantly painful and is counterproductive in the end. Children don't get the warmth and love they need. Further, this both-at-work lifestyle affects in two ways. On the one hand, children aren't trained properly and don't get the much-needed love. On the other, elderly parents are neglected and suffer from want of love and attention. Many houses are now becoming old-age homes, and aged parents are becoming neglected citizens, with nobody to care for them. Keeping maids to serve is not the solution, but it is just adding to the already existing problems. Despite all their inconveniences, the only thing that elderly people have is the supreme pride that 'my son is so-and-so and works in NY or America'. Living in this dream world, but suffering constantly in the realistic world due to lack of help, attention, and care is what the situation now is. No one is there to ask many elderly people about their anxiety, health issues, and worry.

Hindu homes are generally wanting in children. This is because a family has only one son or two children at the most. The ancient 'joint-family' or living together as one extended family is rare to be seen now. When that social system of relatives living under the same roof was practised, children always had company and several caretakers at home; elders had little to worry about, and all went on well with minimal problems. Now the situation is different. The house itself is perhaps on the 10th or 15th floor in an apartment. No playmates, no playground, no going out, nothing. Parents are busy. What can the children do?

They have one distraction, and that is, to get busy with video games, PlayStation, mobiles, tablets, and so on. That is, they have to live in a virtual world. The natural laughter and fun and play are all missing. And parents live in their worlds, busy with monetary worries. Saturdays and Sundays are busier due to extracurricular activities. Gradually, such a lifestyle is becoming routine and is turning into the character of the child. Addiction to gadgets is becoming a headache for busy parents. Scolding will help little; screaming will not help either. Counselling, as we showed, helps little because the situation is entirely new.

Look at a family situation. Parents are busy and the child also is busy with his or her mobile or tablet or game. So long as the child doesn't disturb, parents are happy that they can work. If there is a disturbance, there is an annoyance. There was some good development in recent times. When the horrible pandemic arrived two years ago, working from home became the new norm. Work from home, wow! People thought that the family shall become integrated, love shall increase, and all can live closer together. However, work doesn't always mean only work. There have to be regular online meetings and if the baby or child cries during the meetings, like background noise, the meeting will definitely not go well. What's more, the job itself might be at stake. So some parents place their little ones, even babies, in daycare centres and work from home. Just imagine! The child outside, parents at home! No wonder why the elderly are sent away to old-age homes by their children. 'You did not care for me when I was a child. Why should I care for you now? I too have to earn money and care for my family.'

All this shows that our ancient people were correct. *A sick society has its roots in the sick family. Illness in families has its roots in lack of love, care,*

laughter, and leisure. So the age-old family life is important. Social systems may change but the family is the centre. No counsellor can search old books to counsel the child in this digital situation when society itself has changed drastically. All he or she can do is to advise parents to sacrifice for their children.

So what is the solution? Rather, why do such situations arise in the first place? Children getting addicted to games or gadgets is not because they have to, but because you as parents want them to '*go with the times*'. You want your children to be modern. What is the sacrifice at this altar of modernity? It is tradition. You want to earn money and you want your children to be super-modern. This desire for hyper-modernity makes you barter tradition for modernity. This is where the problem lies.

What do we mean?

Traditionally, parents taught their children to pray. At the tender age of eight years, the son would be invested with the sacred thread and he would repeat the *Gayatri mantra*, the most powerful mantra, daily. Girls were taught to worship and to pray. All of this helped to gain tremendous mental strength, and willpower. Further, children saw their parents visiting temples, worshipping daily at home, praying, reading scriptures, and the like. There was internal discipline, there was spiritual power, and there was joy. Joy means love and understanding, care and concern.

All this is gone now. Since all are busy, almost nothing is done. Parents wake up late, which is the modern lifestyle, and children too wake up late unless they have morning school. Push breakfast through the mouth, rush to school, rush to the workplace, no time to think any higher thought, and life is a burden.

The solution is to bring back the tradition. Rise early. Begin the day with worship and prayer. Nobody is so busy in this computer-generated universe as to give a few minutes to the healthiest and valuable exercise that is prayer. We can make time for worship and prayer. Children see what you do. Children listen to advice through their eyes. Teach them how to pray daily, while you also pray and worship. Be strict about this. Gradually, their inner strength grows with age, and this makes them avoid anything that is harmful in the end.

The second tradition that has to be followed is the study of histories: Ramayana especially. Ramayana is not just the history or story of Rama. It is culture itself. It brings strength. If printed books are unavailable, go for online versions. The study of works like Ramayana, the stories of Dhruva, Prahlada, and so on at home is a tremendous help to grow. This is better than video games.

The third tradition that needs to be followed is to train children to have respect: Respect for elders, for the tradition itself, for knowledge, and the like are so important. This brings value to life.

The fourth point is to encourage children in outdoor games and sports. And the fifth tradition is to engage children in work and activities. Let children do some work. Rich families bring up their children in such a way that the children never know difficulties at all. When they grow, they are like babies living inside grown-up bodies. No maturity. Maturity comes only by facing difficulties. So ask your children to work. Next, have loving discussions, encourage creative arts, and the like. All this will make them forget the digital toys and grow into responsible citizens.

The eternal law is, *what we give, we get back*. We give love, affection, the right knowledge, training, and support, and we get that back when we are old. PB

Understanding Deep Sleep According to the Upanishads

Swami Satyamayananda

Yā devī sarvabhūteṣū nidrārūpeṇa samsthitā, namastasyai, namastasyai, namastasyai, namonamaḥ; repeated salutations to the Devi who dwells in all beings as sleep.[1]

Sleep is natural. It feels angelic to slowly sink into sleep. The lights inside go out. You are not there. Sleep is wonderful, rejuvenating, and mysterious. We spend one-third of our lives in it. In deep sleep, everyone—rich and poor, learned and ignorant—is equal. *Humanity in this Digital Age will need to learn not just about deep sleep or sushupti from the Upanishadic rishis, but to understand reality*. For instance, Brihadaranyaka Upanishad says: 'As a hawk or a falcon flying in the sky becomes tired, and stretching its wings, is bound for its nest, so does this infinite being run for this state, where falling asleep, craves no desires and sees no dreams.'[2] 'In this state, a father is no father, a mother no mother, worlds no worlds, the gods no gods, the Vedas no Vedas. In this state, a thief is no thief, a killer of a noble Brahmana no killer, ... a monk no monk, a hermit no hermit. (This form) is untouched by good work and untouched by evil work, for it is then beyond all the woes of the heart (intellect).'[3]

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The Circadian Rhythm

Our sleeping and waking cycles are regulated by a complex sequence of physiological and neurological processes. Known as the biological clock, circadian rhythms are also observed all over nature—in bacteria, fungi, plants, animals, and mammals. Recent studies show the existence of neural networks related to sleep, especially at the back of the brain.

Today's networked Digital Age comes with a price of debilitating effects on sleep, which in turn affects health and the psyche. With invisible radiation already pervasive, it will get worse with 5G technologies being rolled out. The Digital Age gave rise to Artificial Intelligence (AI). Few saw AI's pervasive impact, but it is inevitable. *Humanity created AI and in turn, AI is creating modern humanity and society*. This has disrupted the circadian rhythms not just of humankind but of innumerable creatures. We are changing the night!

With the disruption of the natural secretion of melatonin, the use of sleeping pills has increased to frightening levels. It is impossible for many to sleep without pills. We must approach sleep with respect; instead, we check our phones, keep eating and working till late on devices, watch movies or hear songs—and still expect to get a good sleep. It is also found that people who have spent their day in good spirits guided by morality fall asleep easily. Lack of exercise makes the brain inefficient. Immorality is

one of the main causes of sleeplessness. In India, the grandmothers used to tell bedtime stories from the Epics like Ramayana and Mahabharata and the Puranas like Bhagavatam to children that helped them mould their character. It is normal to do Japa or pray till one feels drowsy with sleep. In the old days, going to sleep was like going into *nidrā mandir*, the inner shrine of sleep, for here we get in touch with the deepest part of our reality. Only some yogis who experience samadhi can transcend circadian rhythms. For them, samadhi is more restful than sleep.

Physical and Mental Health Problems Due to Sleep Deprivation

'*Sleep is for wimps*', is a popular phrase. It is a lie. Sleep deprivation has been recently declared by the CDC (Centers for Disease Control and Prevention, US) as a Public Health Epidemic! Studies after studies show the alarming effects of inadequate sleep on the human mind and body. Bodies and minds need sleep; otherwise, they fragment. The modern digital age is marked by sleep deprivation needing medical attention, while impacting national economies and harming social life. Some of the pressing problems due to lack of sleep are:

1. *Mental Problems*: Attention, intelligence, emotions, cognitions, and memory — are all negatively affected, resulting in poor problem-solving skills, bad judgement, and slow learning.

2. *Depression and Anxiety* are observed in sleep-deprived people as well as irritability and anger, leading to anti-social behaviour as well as psychosis.

3. *Gaining weight* due to craving for high fat, high carbohydrate, and high sugary foods, upsetting the endocrine system.

4. *Heart Disease* is called the silent killer. Inadequate sleep affects the regulation of cortisol, the stress hormone that raises blood pressure.

5. *Diabetes* is called a slow killer. Risks of developing Type-2 Diabetes is extremely high, and Insulin Resistance is the beginning of a disaster.

6. *Lowered Immunity* is the killer on the prowl. Lack of sleep is linked to a weakened immune system, which cannot fight infections and inflammation.

7. *Autoimmune Diseases* are on the rise in urban areas. They are but the immune system attacking itself or overreacting to pathogens.

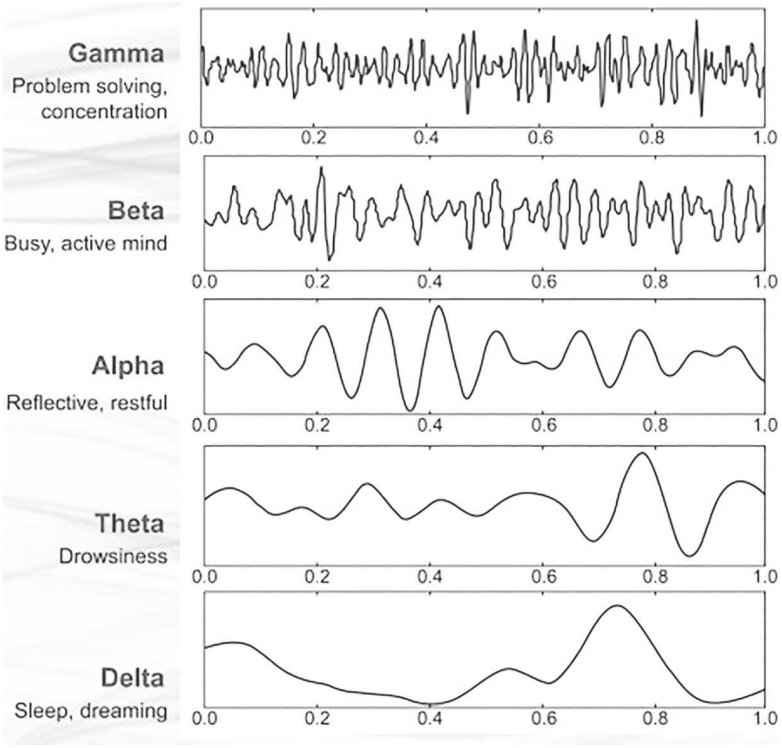
8. *Premature Aging of Skin* is due to Cortisol breaking down collagen, the essential structure of the skin.

What Sleep Is and the Amount Required

Melatonin is secreted through the pineal gland, in response to darkness, signalling the start of the sleep cycle. The brain stops registering sensory stimuli and there is a change in the Electroencephalograph (EEG) patterns. The voluntary muscles are deactivated not to act out dreams during Rapid Eye Movement (REM).

Babies need 15 to 16 hours of sleep; newborns need even more! That is because the brain is fixing the neural networks and needs no interference. Between one and two years, a child needs 11 to 14 hours; children of about five need 10-13 hours; by puberty, the brain needs 9 to 12 hours of sleep; teens need 8-10 hours; adults need 7-8 hours per day. These sleep periods include naps. As we age, there is a reduction in sleeping hours.

Obstructive sleep apnea is one of the leading causes of disturbed sleep because breathing is interrupted. It is found that narcoleptics, those who fall asleep anytime anywhere, spend nights restlessly. Narcolepsy is a neurological disorder. There are other factors but overriding most of them is the blue light from the electronic devices, as well as the ambient radiation from them. These problems are not fatal but they reduce the lifespan and affect health.



Brain Wave Patterns

Sleep Clinics

'Sleep Clinics' are sprouting in many countries and there is a growing number of 'sleep specialists'. A sleep clinic is a medical lab where patients are monitored for oxygen levels, brainwave patterns, secretion of melatonin and so on, either during night or day to study sleep. There is a growing body of evidence that *Delta Sleep* contains secrets that can answer some questions regarding dreams and waking. One thing is certain: the joy that is experienced in deep sleep is nonpareil. If that joy were absent, the human mind would become unhinged and would lose all interest to live and work. According to Vedanta, when the mind merges in the *ānandamaya kośa*, which is the inmost layer of the human personality, one experiences unalloyed *ānanda* or bliss.

Brain Wave Patterns

(i) *Beta waves*: Three levels of Beta waves guide our waking consciousness. Low-range is defined as relaxed but interested attention—13 to 15 hertz (cycles per second); Mid-range is when our attention is focused on sustained external stimuli—16 to 22 hertz; High-range is from 22 to 50 hertz, which is seen during stressful situations called high arousal state unsuitable for learning with too much focus.

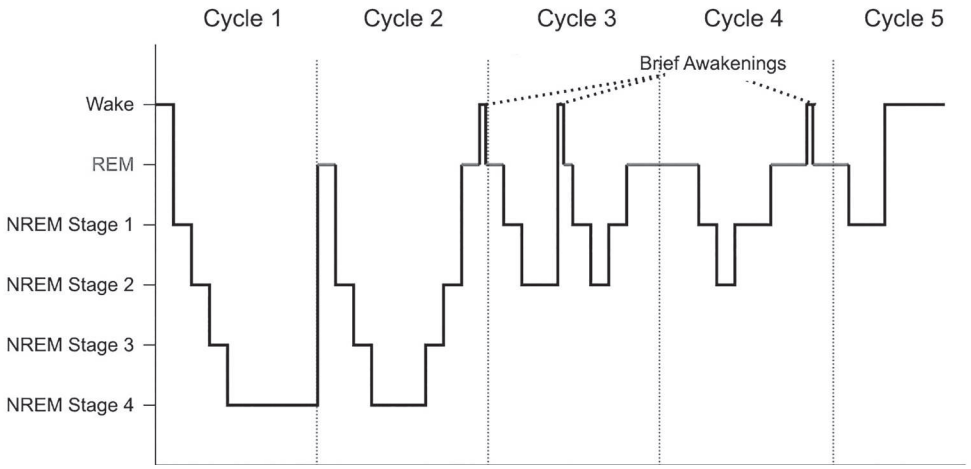
(ii) *Alpha waves*: The brain can move easily from Beta to Alpha waves which have 8 to 13 hertz. When information from the Beta waves is consolidated in Alpha mode, one's thoughts become 'real', and one can remember and recall information.

(iii) *Theta* waves correspond to 4 to 8 hertz. These are slow waves also called lucid or twilight stage—half-awake and half-asleep. The mind is slightly awake, and the body is asleep. No critical thinking is possible as it is connected to the realm of imagination. This is subconsciousness.

(iv) *Delta waves* are awfully slow waves that range between 0.5 to 4 hertz and is characterised as deep sleep.

(v) *Gamma waves* are 40 to 100 hertz, fast and coherent. These waves are more compressed and have a smaller amplitude than other waves. They show elevated states of mind such as happiness, compassion, increased awareness, and memory formation. They are also spoken of as having a 'peak' or (bodily) transcendent experience.[4]

Sleep Cycles



Why We Sleep Hypnogram

Everyone knows sleep is not uniform. We go through four to six stages of varying lengths. There are four distinct patterns, one for REM and three Non-Rapid Eye Movement (NREM).

Stage One: Dozing off NREM stage lasting from 1 to 7 minutes. We enter into the hypnogogic state for a few moments or minutes where thoughts flutter, melt, and transform.

Stage Two: Again, NREM marked with deep relaxation and drop in body temperature. Breathing and heart rate slow. Eye movements stop. It lasts from 15 to 60 minutes. More than half of the sleep time is spent in this state.

Stage Three: Delta Sleep, deep NREM or slow-wave sleep. It is difficult to wake someone from it. It is restorative and lasts from 20 to 40 minutes, depending on the cycles as sleep progresses to become shorter.

Stage Four: REM sleep or dreams occur from 10 to 60 minutes. It merges in Stage Two and so on.

Just before waking, we enter the hypnopompic state where the brain tries to make sense of the external world.

Sleep and Samadhi

Some preachers equate samadhi and sleep. But sleep itself is the first obstacle to samadhi. Swami Vivekananda teaches:

> How, for instance, do we know that a man in Samadhi has not gone below consciousness, has not degenerated instead of going higher? ... The answer is, by the effects, by the results of the work, we know that which is below, and that which is above. When a man goes into deep sleep, he enters a plane beneath consciousness. He works the body all the time, he breathes, he moves the body, perhaps, in his sleep, without any accompanying feeling of ego; he is unconscious, and when he returns from his sleep, he is the same man who went into it. The sum total of the knowledge which he had before he went into the sleep remains the same; it does not increase at all. No enlightenment comes. But when a man goes into Samadhi, if he goes into it a fool, he comes out a sage.[5]

Nitya Pralaya*, Daily Dissolution*

When one's identity disappears, one experiences joy. When we wake up, we pick our identity once again and then begins all the troubles. Clearly, the ego, which is absent in deep sleep, is the cause of our present condition. It is also said, 'sleep is a brother of death'. In ancient Greek mythology, sleep and death were twin brothers, the personifications of darkness and night. I remember my maternal grandmother who passed away in sleep, and she is not the only one. It is also found, however, that some persons wake up speaking a different accent, or can speak in a different language. It is a common experience to find a solution to a vexing problem on waking up. For a few others, a transformative experience

occurs, and they wake up being an enhanced version of themselves. Vedanta teaches that the individual identity, including gross and subtle phenomena, merges in and emerges out of the *kāraṇa śarīra*, causal body, characterised with bliss and ignorance.

'When We All Fall Asleep Where Do We Go?'

This is the title of a song by Billie Eilish, a famous contemporary young singer. The *Patanjali Yoga Sutra* (1.10) classifies sleep as a *vritti*, movement in the mind, 'that embraces the feeling of voidness'. Billie Eilish should have read the *Mandukya Upanishad* that declares:

> That state is deep sleep where the sleeper does not desire any enjoyable things and does not see any dream. The third quarter is *Prajnā* (the entity in deep sleep) which has sleep as its sphere, in whom everything becomes undifferentiated, who is a mass of consciousness, who abounds in bliss, who is surely an enjoyer of bliss and who is the doorway to the experience (of dream and waking states).[6]

Prajnā resides in the *ākāśa*, space, of consciousness in the heart, *buddhi*. In Chandogya Upanishad, we find Uddhalaka, the son of Aruna, saying to his son Shvetaketu: 'O good looking one, learn from me about deep sleep. When a man is spoken of as *svapiti*, he sleeps, then he becomes merged in Existence. He attains his own Atman.'[7] This is a staggering declaration, and the implications go beyond all other schools of philosophies and their doctrines.

Seen from yet another angle, Brihadaranyaka Upanishad says: 'As a man fully embraced by his wife, does not know anything at all, either external or internal, so does this infinite being (self), fully embraced by the Supreme Self, not know anything at all, either external or internal. That is his form—in which all objects of desire have been attained and are but the self, and which is free from desire and devoid of grief.'[8]

In deep sleep, both *Prajnā* and *Īśvara*, through a very subtle function of the *ajnāna* or non-knowledge, illumined by Consciousness, enjoy bliss.[9]

Svapiti, *One That Sleeps*

The *Brihadaranyaka Upanishad* speaks of a proud young eloquent teacher named Balaki of the Garga lineage. He offers to instruct King Ajatashatru of Kashi, saying: 'I will tell you about Brahman.' Asked to proceed, Balaki's each instruction was dismissed by the king, with a 'No, no! please don't talk about Him', while showing him a higher aspect of Brahman. Balaki's pride was finally crushed after his twelve instructions were rejected in this manner. Balaki then asked to be taught by the king. Ajatashatru then led Balaki to where a man was fast asleep. The king called that sleeping man, 'Great, White-robed, Radiant, Soma' (one of the descriptions of Brahman). The man did not awaken.

The king then repeatedly shook him. The man awoke. Ajatashatru asked Balaki: 'When this being full of consciousness (identified with the intellect) was thus asleep, where was it then and whence did it thus come back?' Balaki remained silent. The King then proceeded to instruct him: 'When this being *vijñānamaya* (full of consciousness) is thus asleep, it absorbs—at that time—the functions of the organs through its own consciousness and rests in the Supreme Self (*ākāśa*) that is in the heart. When the being absorbs them, it is called *svapiti*. Then the organ of smell is absorbed, the organ of speech is absorbed, the eyes are absorbed, the ear is absorbed, and the mind is absorbed.' The king further taught Balaki that the entity that goes into and returns from deep sleep does so through the seventy-two thousand *nādi*s or subtle nerves called *hitā*, like a spider that moves along the web it has produced.

At the beginning of this story, Balaki taught Ajatashatru about *prāṇa* that sustains the universe, which is *saguṇa* or conditioned Brahman. Also, he referred to the *jīva*, the individual consciousness, which is identical with *nirguṇa* or unconditioned Brahman. The difference between *jīva* and *prāṇa* is not noticed in the waking and dream states. During deep sleep, *prāṇa* remains awake (keeping the body alive); the *jīva* is merged with the Supreme Atman. *Prāṇa* did not respond when Ajatashatru addressed it with its specific names, even though awake! Hence, it could not be that being, which is 'full of consciousness'—the *jīva* or *Brahman*. Thus, the king showed Balaki the existence of a Reality which is quite different from the apparent reality of the body and organs including *prāṇa*.[10]

We Need Help Out of This Confusion

We feel free and yet experience bondage. Freedom is the nature of the jiva as Brahman; bondage is an attribute of *prāṇa*, mind, body, and senses. However, freedom and bondage are mutually contradictory as 'light and darkness'! 'Nevertheless, owing to an absence of discrimination between *jīva* and *prāṇa*, there continues a natural human behaviour based on self-identification in the form of "I am this" or "This is mine". This behaviour has for its material cause unreal nescience (ignorance) and one resorts to it by mixing up reality with unreality as a result of superimposing the things themselves or their attributes on each other.'[11]

How will this *adhyāsa* or superimposition end? We can learn it from the following episode:

> One night, Latu (later Swami Adbhutananda) was fanning the Master (Sri Ramakrishna). He had worked hard all day and felt drowsy; but despite his sleepiness, his service to the Master did not slacken. Observing this, the Master asked him half-jokingly and half-seriously, 'Leto, can you say whether God sleeps or not?' The question surprised Latu and he answered that he didn't know. Then, more seriously, the Master continued: 'Everyone in the world sleeps, but God does not; if God slept, the universe would be plunged into darkness and would dissolve. God must remain awake day and night taking care of his creatures, so that they can sleep without fear.' Latu was amazed: 'Do you mean that God takes care of his creatures while they are sleeping, and that they accept service from Him, their Creator?' 'Yes', said the Master, 'that is right. He lulls His creatures to sleep and stays awake to watch over them.'[12]

Now we can sleep peacefully. And one day wake up from the sleep of 'ignorance' and realise our true nature as eternally free.

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Digital Emotional Well-being Programme for Rural Children during Covid-19 Pandemic

A Research Case-study at Ramakrishna Math Rural Unit, Chennai

Swami Sarvabhadrananda, Swami Paramashivananda, and Bharath Natarajan

Introduction

Emotion is an essential aspect of human existence and evolution. Emotions play a very important role in human physiology and psychology.[1] Emotions affect perception, interactions, intelligence, and decision-making. Traditionally, emotions are categorised as a binary output—either positive or negative, pleasant or unpleasant. But modern research indicates that each emotion contains some degree of positivity and negativity.[2] Emotions need to be educated and disciplined. By giving a constructive orientation to these emotions, the energy of the emotion can be utilised for a good purpose, thereby building up good character and improving the well-being of the individual.[3]

Children are humanity's greatest assets and future citizens of the modern world. It takes a parent, family, and community to bring up a healthy child through love, nurturance, and gentle guidance.[4] There can be no second opinion that the children's physical health, as well as their emotional well-being, have to be taken care of at all times. An experience of an emotional ordeal in one's childhood may leave unforgettable scars and may result in negative behaviour that may manifest later in adult life.

Children are highly impressionable and easily influenced by their families, friends, or even strangers. They tend to imitate what they see, hear, do, or say among friends without realising the negative impact it may have on them. Swami Ranganathananda, the 13th President of the Ramakrishna Order says in one of the Lectures on the Bhagavadgita: '*It is difficult if you don't deal with it in the beginning itself. What we call character training, is based upon this conception. Any child—its sensory system must be disciplined. After about the 5th year, that discipline begins. Then only it develops a high character. Its mind becomes clean and pure without any infection*.'[5]

During the period of growth, children need to acquire many vital emotional and social values that will enable them to be responsible adults and contribute to the society they live in. Among others, they need compassion, self-awareness, motivation, perseverance, responsibility, and must gain physical and mental maturity. The parents and teachers play a vital role in helping children inculcate these values and beliefs into their character.

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The ancient Indian social and educational structure was able to nurture both the emotional and physical well-being of children for a very long time. The presence of the rural community that provided a safety net around them and the joint family system where grandparents helped in parenting were positive factors. With the advent of nuclear families and the modern education system, the new generation has been forced to take up this arduous task on themselves.

Emotional Well-being of Rural Children During the Covid-19 Lockdown

The Covid-19 pandemic and the lockdown took a toll on the emotional well-being of children due to the closure of schools and the sudden switch from physical learning to online modes of learning. In India, which has the largest child population in the world with 472 million children, the lockdown had significantly impacted 40 million children from poor families. Rural children's emotional well-being was at the highest risk due to economic adversity caused by the lockdown and increased anxiety due to the closure of schools while coping up with new mechanisms of long-distance learning. The role of parents, teachers, and healthcare workers play an important role in the identification of emotional problems in children, by supporting them through this phase and providing solutions to their challenging problems. Due to the pandemic, as the existing support systems were overwhelmed, social service organisations tried to fill the gap in identifying high-risk children with loneliness, stress, and anxiety, and co-ordinate with caregivers and mental health care professionals.[6]

Digital Emotional Well-being Monitoring and Digital Health Intervention

The rapid growth of digital technologies offered an opportunity to provide increased access to emotional health monitoring and utilising emotional data to personalise preventive interventions for children. During this pandemic, digital emotional well-being interventions were becoming heavily emphasised as a way to respond to the emotional problems in children.[7] NGOs like Ramakrishna Math, Chennai did a research review of this approach during the pandemic and tried to pilot a preventive model where early-stage detection of emotional health issues using digital technologies along with early interventions would help regulate the emotional well-being of children.

A two-fold process of identification and intervention was planned—

(i) Automatic identification of emotional health issues utilising multi-modal based emotion recognition technologies that was verified by trained rural coordinators administering psychological behaviour model questionnaires to children.

(ii) Emotion regulation, utilising time-tested traditional training methods like instructor-based meditation and yoga techniques, delivered through digital health interventions.

Automatic Emotion Recognition

During human communication, emotions reveal verbal cues and multiple non-verbal cues in terms of facial expressions and body gestures. Depending upon the context, a person just saying 'OK' when mapped with verbal and non-verbal cues could convey a wide range of emotions such as happiness, sadness, anger, or disgust.[8] To analyse and recognise these emotions, multiple cues have to be tracked in a person by the digital emotion recognition system. Even in the absence of external visual or vocal cues, the physiological human body gives lots of internal cues such as heart or pulse rate, breath rate, and the electrical activity of brain waves that play a major role in the generation of robust

emotion recognition system.[9] A multi-modal system that can do facial expression recognition, speech emotion analysis, gesture recognition, and monitoring of physiological parameters working in a hybrid model needs to be designed which can help detect the right emotions with a higher accuracy in children.[10]

Emotion recognition through Facial expressions: 'Face is the index of mind', says an old adage. Facial expression recognition can distinguish between different facial gestures and also interpret the states of human mind. Charles Darwin, the famous evolutionist in his major work *The Expression of the Emotions in Man and Animals* mentions that facial expressions that are an extension of emotional states are similar despite differences in age, gender, and ethnicity.[11] This theory was later elaborated to surmise that fear, anger, disgust, happiness, sadness, and surprise are the universal basic facial emotions that are uniform across all people.[12] A continuous emotion recognition system using automatic facial analysis could help identify the emotional health problems associated with the children.[13]

Emotion recognition through speech and body gestures: Speech plays an important role in human communication, and it reveals the cognitive states, intentions, and emotions of individuals. Body language also plays an equally important role because people may consciously or unconsciously use head and hand movements along with other body gestures.[14] In the case of humans, while communicating, words are automatically loaded with the emotions that one wishes to express. The same string of words can also express a whole lot of emotions when there is a change in the pitch intensity, pitch variation, and speech rate.[15] If the facial cues could be supplemented by the analysis of the tone and substance of vocal expressions, the accuracy of identifying the emotions would be higher. Utilising these features, a modern speech emotion recognition system would be able to analyse and detect emotions across languages and cultures. Body gestures and postures complement the facial and speech analysis and result in identifying the intensity of children's emotions.

Emotion recognition through physiological parameters: The physiological aspect of the human body is mechanical, electrical, thermal, magnetic, and chemical in nature. Human senses are tuned to receive various types of data such as sight (electromagnetic), touch (mechanical, thermal), sound (mechanical), smell and taste (chemical). The physiological sensors aid in the detection of information such as brain signals, heart rate, pulse rate, and breathing frequency, which reflect the emotional states in a person.[16] For example, a fear emotion could invoke a physiological response that could cause an increase in skin sweat, heart rate, and breathing rate.[17]

Electrical brain activity is affected by emotions. In addition to periphery physiological signals, EEG signals from brain waves have been proven to provide greater insights into emotional processes and responses.[18] EEG is used to record such activities and is reliable for emotion recognition due to its relatively objective evaluation of emotion compared to non-physiological cues.[19] Utilising a blend of multiple internal physiological parameters can improve the accuracy of a digital emotion recognition system in a child.

Monitoring emotional health through psychological questionnaires: Children have experienced uncertainty, loneliness, and anxiety due to disruption in school education, physical activities, and opportunities for socialisation during the Covid-19 lockdown.[20] Loneliness and anxiety have proven to be a contributing factor to mental health problems even in perfectly healthy children during social isolation.[21] Two psychological questionnaires—Spence Children's Anxiety Scale[22]

and UCLA Loneliness scale[23] have been commonly utilised in many countries across cultures to measure the emotional health in children. The trained coordinators could administer these questionnaires to children through teleconferencing and results would be correlated with the automatic digital emotion recognition system to verify if indeed the child has emotional health issues.

Emotion Regulation through Yoga and Meditation

Children with anxiety often experience psychological and physiological symptoms. So interventions that reduce these problems and integrate cognitive, behavioural, and physical modalities are required. Interventions that can be implemented in a variety of settings, such as home, school, and community will allow children to have greater access to these with a higher engagement rate. Yoga (controlled breathing, body postures, and meditation) is an integrated body-mind intervention that intuitively embodies all of these modalities and is widely used to promote emotional well-being among children.[24] With reduced physical activity and increased emotional distress during the pandemic, Yoga based lifestyle provides a suitable approach for enhancing emotional well-being.[25]

Meditation and Mindfulness practices have ancient origins in Hindu and Buddhist cultures. Some of these contemplative practices share an essential intention of directing awareness to the present moment. These practices also allow one to witness one's thoughts and emotions, rather than immediately reacting to them. With consistent practice, these techniques may empower children by mastering self-care and self-regulation to manage emotional health. Overall, the practice of yoga and meditation can help to increase positive emotions, while decreasing negative feelings of depression and anxiety.[26]

Digital Health Interventions—Telehealth and XR Technologies

Telehealth refers to the use of telecommunication and information technologies to provide health care for distant or isolated individuals. The current pandemic has made tele-health a way to bridge the rural-urban health divide in developing countries like India and is emphasised as a preferred approach of delivery of healthcare.[27] Tele-yoga, an alternative to yoga being provided face-to-face at a centre involves teaching yoga and meditation techniques using cloud technology to relay from the trainer's place to multipoint video conferencing centres.[28]

Technologies that evoke the perception and feeling can meaningfully impact the practice and outcomes of telehealth, especially among children. Immersion into a fully simulated virtual world such as VR (Virtual Reality) or superimpose virtual objects in real-world in AR (Augmented Reality), or direct interaction between the virtual and real-world in MR (Mixed Reality)—each provides new ways to enhance health care practice in the shift to remote delivery. The VR, AR, and MR technologies—collectively referred to as XR (Extended Reality) have proved beneficial especially in psychiatric interventions.[29] VR guided meditations have now become widely popular and can be digitally delivered providing an immersive experience, and they promote greater engagement in children than traditional delivery methods. A single session of VR meditation has proven to reduce anxiety levels among homeless younger age groups.[30]

Plan of Action and Implementation

A 'socially distanced' setup in a community learning hall was planned with advanced cameras and multiple IoT (Internet of Things) sensors with AI (Artificial Intelligence) processing tools in which children would attend the online

Fig. 1. Emotion Recognition System at Ramakrishna Math rural unit, Chennai

classes and also participate in the Yoga/Meditation intervention sessions.

The human emotions captured by the multimodal system are sent to an emotion recognition system, which are then classified as positive, negative, and neutral emotions. Negative emotions such as anger, fear, sadness, and disgust were then averaged out over a time period to compute the negative emotion index. The negative emotion index is of interest using which a rural coordinator would be able to identify the high-risk children with emotional problems and provide the emotional health interventions as required.

A subset of the above plan of action was translated into a pilot project called **'WeMindYou App — Emotional Well-Being of Kids during Covid-19'** implemented at a Ramakrishna Math Rural unit, Chennai. WeMindYou App provides a digital workflow to identify the emotional well-Being of children through facial analysis and a subjective psychological questionnaire, empower them with time-tested integrated body-mind training techniques like meditation/yoga, and finally verify the improvement in their emotional well-being, using neural correlates.

The App provides the following functionalities for the rural coordinator:

a) Registration of new children into this emotional well-being programme.

b) Administration of the psychological questionnaire (Loneliness scale and Anxiety Scale).

c) Populating the negative emotion metrics into WeMindYou App derived from cloud emotion recognition app.

d) Uploading Yoga/Meditation media content for digital health intervention.

e) Providing detailed charts, reports, and analytics for interactive visualisation of various emotion metrics of children.

Challenges

The discussion of mental health, especially among children in countries like India, is a topic of taboo and getting acceptance for testing among families of rural communities is a big challenge. The WeMindYou project tries to circumvent this by attempting a preventive intervention in a community-based learning environment for children. The medical terminology of 'mental health' has also been rephrased as 'emotional health/well-being' to avoid stigmatisation from society.[31] The environment has also been structured such that issues such as anxiety, loneliness, stress, and depression could be openly shared, discussed, and solved.

Conclusion

This Digital emotional well-being programme has been a great boon not only for the rural children but also for the differently-abled children suffering from emotional health issues, who with existing physical impairments, also need to deal with the psychological impairments. But with any new advanced technology, a better approach for us at this juncture is to explore these modern tools comprehensively analysing the pros and cons and try to use them to our advantage within the framework of human values and ethics. As Swami Vivekananda says, 'Each mind is connected with every other mind', only one human being can understand, empathise, and connect with another human being.[32] So, these technological tools need to be chosen by ensuring that they only augment human efforts and not try to replace them.

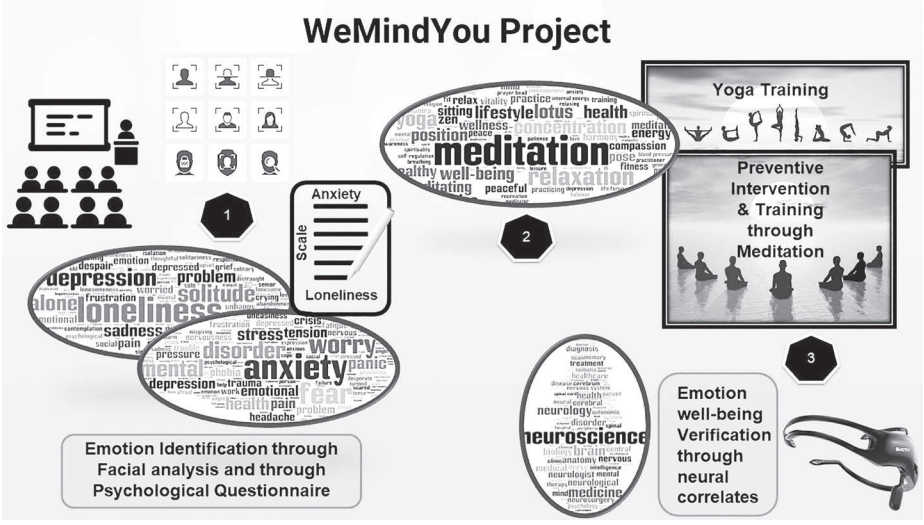

Fig.2. Overview of the WeMindYou Project

Awards and acknowledgements

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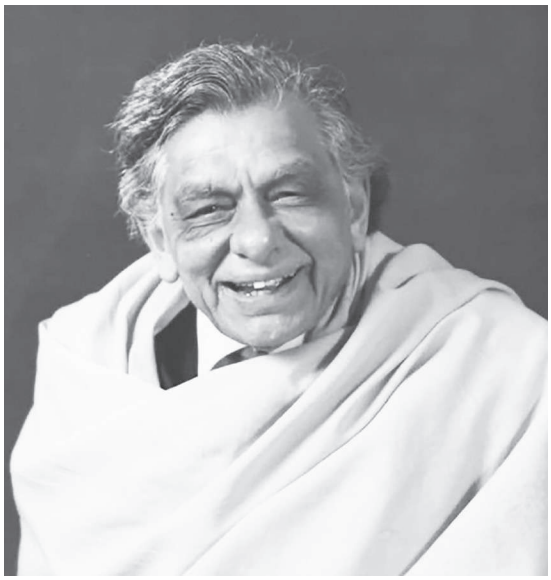
Can God-vision and Television Go Together?

Swami Chidekananda

God vision and television do not go together — Swami Aseshananda, an enlightened monk and the last living monastic disciple of Holy Mother Sri Sarada Devi, used to say this often. If the Swami were alive today, he would probably warn of the dangers of the internet, social media, and the smartphone. So does this mean that we should avoid the internet altogether? No. The internet has undoubtedly helped countless spiritual seekers during the ongoing pandemic, providing virtual *sadhu-sangha* (holy company) in the form of lucid lectures on Vedanta, interactive classes and seminars, uplifting bhajans, and most importantly, personal interactions with like-minded monks and devotees. There are other innumerable benefits to the internet. Researchers all over the world, for example, can now easily access resources in the best universities in the world in the blink of an eye, to gain new insights and produce novel results in their research. In addition, it may be said that the human mind in general has become more resourceful in finding solutions to problems.

That being said, it is a known fact that whenever any new type of technology is introduced into our lives, there will be positive as well as negative consequences. Marshall McLuhan, author of *Understanding Media: The Extensions of Man*, says:



Swami Aseshananda (1899–1996)

> The boons [of the net] are real...[t]hey supply the thought, but they also shape the process of thought. And what the Net seems to be doing is chipping away my capacity for concentration and contemplation. Whether I'm online or not, my mind now expects to take in information the way the Net distributes it: in a swiftly moving stream of particles. Once I was a scuba diver in the sea of words. Now I zip along the surface like a guy on a Jet Ski.[1]

As spiritual aspirants, it is important to understand how the internet may adversely affect us. By doing so, we will be able to take effective corrective measures to counter these negative influences.

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I. Addressing Some Common Objections

Technological determinism is the view that technology shapes and influences both society as well as individuals. My view is that the internet is compromising our cognitive abilities and substantially impairing our ability to function effectively in the world. At the same time, we have the freedom to minimise the detrimental effects of the internet by changing our reading habits and practising greater mindfulness in the virtual world.

Instrumentalism is the view that technology is merely a neutral tool that is 'entirely subservient to the conscious wishes of their users' (ibid., 46). *Instrumentalists*[2] claim that the internet—like all other inventions—is simply an inert tool and that human beings can control their use of it. In contrast, technological determinists argue that technology shapes and influences society as well as the individuals.

Let us look at some of the common objections which are made by instrumentalists and replies to them.

***Objection**: Is this not the same type of overreaction—that the world will come to an end—which takes place whenever any new type of technology is invented and used? Did people not say the same thing about the television, microwave, and other inventions?*

No. Researcher and author Nicholas Carr explains that there are four types of inventions that either 'supplement or amplify our native capacities'[3]: (1) some technologies increase our physical capabilities like the fighter jet, exoskeleton suit, and so on; (2) inventions that 'extend the range of our senses' (ibid.) like microscopes, telescopes, and amplifiers; (3) technologies that enable us to reshape nature to better serve our needs and desires like the reservoir, genetically modified food products, birth control, and desalinisation of the ocean; (4) the fourth type is called 'intellectual technologies'. These help us to support or extend our mental powers. These include instruments that help us to comprehend the written word like dictionaries, to find and classify information like the Dewey Decimal System, to formulate and articulate ideas, to take measurements and perform calculations, and finally to expand the capacity of our memory. Intellectual technologies include the map, mechanical clock, printing press, calculator, computer, mobile phone, and now the internet.

Among these four types of inventions, experts find that 'intellectual inventions' exert the greatest influence over us because 'they are our most *intimate tools … for self-expression, for shaping personal and public identity*, and for cultivating relations with others' (ibid., emphasis added).

In other words, these tools become an extension of our body-mind complex. Reading this, we cannot help but recall the genius of Steve Jobs, the founder of Apple. He successfully built products—like the laptop, iPad pro, and iPhone—which became like an additional appendage or limb for its users.

How did the printing press, developed in 1492, help to cultivate the 'linear literary mind'?

II. The Effect of the Printing Press on the Human Mind

Carr defines the '*linear literary mind*' as the mind which developed after the invention of the printing press in 1492:

> Ever since Gutenberg's printing press made book reading a popular pursuit, the linear, literary mind has been at the centre of art, science, and society. As supple as it is subtle, it's been the imaginative mind of the Renaissance, the rational mind of the Enlightenment, the inventive mind of the Industrial Revolution, even the subversive mind of Modernism (ibid.).

The reading of printed books over the past five centuries helped humankind to develop that type of mind which can shut out external distractions and focus uninterruptedly on the words of the printed page. To better understand the effect of the printing press on the individual mind, it is necessary to compare the general mind of the people—before the printing press was invented—with the general mind which developed afterwards. Carr explains that the

> natural state of the human brain, like that of the brains of most of our relatives in the animal kingdom, is one of distractedness ... to shift our gaze, and hence our attention, from one object to another. ... *To read a book was to practise an unnatural process of thought, one that demanded sustained, unbroken attention to a single, static object. They had to forge or strengthen the neural links needed to counter their instinctive distractedness* (ibid., 63–64; emphasis added).

Vaughan Bell, a research psychologist at King's College, London, further adds that 'the ability to focus on a single task, relatively uninterrupted', represents a 'strange anomaly in the history of our psychological development'.[4]

If we walk into a zoo and see the different animals, they will most likely be in varying states of 'instinctive distractedness' or shifting their attention from one object to another. By engaging in book reading, we learn to counter this natural animal instinct because it forces us to shut out external distractions and attempt to keep our attention and concentrate on the printed words. Hence, we slowly refine and evolve our minds from animalhood to humanhood.

Swami Vivekananda also placed a great deal of importance on the reading habit. In this regard, we may recall Swamiji's ability to read and master large volumes like the *Encyclopaedia Britannica*. He emphasises that the faculty of concentration should be cultivated through education as well as meditation.

Now, one might object that even before printed books were available, many people—like the hunter, the craftsman, and ascetic—had all trained their brains to concentrate on a single activity. In that case, what is the value of the printed book? Carr writes that reading was important not only for the knowledge which was acquired from the author's words but

> for the way those words set off intellectual vibrations within their minds ... in the quiet spaces opened up by the prolonged, undistracted reading of a book, people made their associations, drew their inferences and analogies, and fostered their ideas. In other words, they thought as deeply as they read.[5]

Here, we see that one benefit of reading and education is that we learn to appreciate different points of view, even if we do not necessarily agree with the other person's thinking. Secondly, we become increasingly logical in our thinking and look for evidence to support our positions, rather than merely going by feeling and biased presuppositions. Third, we develop our ability to make associations, inferences, and analogies to better understand the ideas being presented.

And what was the ultimate effect of the printing press on civilisation?

According to the British philosopher Francis Bacon, once books became common among the masses, the 'literary mind, once confined to the cloisters of the monasteries and the towers of the university, had become the general mind' (ibid., 72). As a result, the world had been remade.

This is a very important observation: it is when the '*literary mind became the general mind*' that society became remade. If this is the case, then what happens when the 'literary mind' becomes diminished because the general masses stop engaging in deep reading? It is interesting to note

that one noticeable trend in society is the tendency towards cancel culture or to simply shut off and not listen to many points of view which are not consistent with our own. As a result, foundations of democracy like open civil debates and unbiased and well-researched journalism are getting diminished.

One might object that these are nice claims, but is there any evidence to support the decline in reading habits in the present age? Secondly, even if there is, how does the internet contribute to this decline in the reading habit and what are the effects of this upon the general mind?

III. How the Internet is Warping Our Minds and Adversely Affecting Our Lives?

Numerous studies show that the internet has caused a significant decline in the reading of printed books. The National Literacy Trust of the US did a survey in 2019 which revealed that only 26% of under-18s spent some time each day reading. This is the lowest daily level recorded since the survey of children's reading habits began in 2005. It also found that fewer children enjoy reading and that this dwindled with age: nearly twice as many five to eight-year-olds as 14 to 16-year-olds said they took pleasure from reading. Overall, a mere 53% of children said they enjoyed reading 'very much' or 'quite a lot'—the lowest level since 2013.[6]

Most experts attribute this to the advent of the internet, social media, and the android phone. They argue that it is affecting how we are receiving and doling out information. One might object that there is some evidence that the reading habit is arguably still intact. It is simply that users now prefer to read online and not from printed materials. If this is the case, then why can't the 'literary linear mind' still be maintained and cultivated through online reading?

Yes, surveys reveal that internet users are indeed preferring to do their reading online, rather than through printed materials. However, the very medium of the internet works paradoxically to warp the linear literary mind: '*The net seizes our attention only to scatter it.*'[7]

Countless studies by psychologists, neurobiologists, educators, web designers, and social media experts all point to the same conclusion: the online environment promotes 'cursory reading, hurried, distracted thinking, and superficial learning' (ibid., 115–16). Although it may be possible to think deeply while surfing the Net, just as it may be possible to think shallowly while reading a book, this is simply not the type of thinking that Net technology encourages and rewards.

For example, when a printed book—whether it be a scholarly article or an old Victorian novel—gets transferred onto an electronic device that is connected to the internet, we automatically enter into that environment of distraction:

> [The] words become wrapped in all the distractions of the networked computer. Its links and other digital enhancement propel the reader hither and yon. ... *The linearity of the printed book is shattered, along with the calm attentiveness, it encourages in the reader* (ibid., 104; emphasis added).

One academic, Christine Rosen, a fellow at the Ethics and Public Policy Center in Washington D.C., described her ordeal when reading Charles Dickens' novel *Nicholas Nickleby* on her Kindle:

> Although mildly disorienting at first, I quickly adjusted to the Kindle's screen and mastered the scroll and page-turn buttons. Nevertheless, my eyes were restless and jumped around as they do when I try to read for a sustained time on the computer. Distractions abounded. I looked up Dickens on Wikipedia, then jumped straight down the Internet rabbit hole following a link

> about a Dickens short story. ... Twenty minutes later I still hadn't returned to my reading of Nickleby on the Kindle.[8]

The above experience may better be described as a *stream of consciousness reading* which is antithetical to the *concentrated linear literary mind*. Moreover, this fragmented state negatively affects our long term knowledge retention. What do I mean? If we do not read with focus, then we will not be able to properly store the information in our short term memory. If the information is not stored in the short term memory, then how can we expect it to go to the long term memory where it can be permanently stored for retrieval? Though one may argue that it is not necessary to store knowledge in our long term database of the mind any longer because of the internet, the counterargument is that when knowledge is stored in our long term memory, it is not merely for the sake of retrieval. We can also—as Sri Ramakrishna puts it—'chew the cud' and continue to refine, deepen, and assimilate the knowledge which we have.

When one spends a large chunk of the day in a fragmented state, how is the brain affected?

Experiments show that just as the brain can build new or stronger circuits through physical or mental practice, those circuits can be weakened through neglect. As Carr explains: 'If we stop exercising our mental skills we do not just forget them: the brain map space for those skills is turned over to the skills we practice instead'.[9] In other words, when we stop reading printed books with deep focus and instead spend the majority of our time reading online with a fragmented mind, then the part of the brain which was once responsible for flow gets displaced by our new scattered mind.

How does this affect our minds?

Prominent neurologists are finding that our virtual behaviour is spilling over into our real lives. Maryanne Wolf, a Tufts University cognitive neuroscientist, worries 'that the superficial way we read during the day is affecting us when we have to read with more in-depth processing'.[10]

According to a new study, excessive use of the internet may make children more prone to the symptoms of Attention-Deficit, Hyperactivity Disorder (ADHD). The study looked at 2,587 high school students who had not been diagnosed with ADHD. Students were surveyed on how much time they spent on digital media, including social media. Researchers found that the students who reported using digital media many times a day were more likely than their peers to display symptoms like inattention, difficulties in organising and completing tasks, and hyperactivity-impulsivity, such as having trouble sitting still.[11]

This is even more alarming if we link this to the findings of psychologist Walter Mischel's Stanford Marshmallow Test, which finds that a toddler's ability to control its immediate impulse to eat a marshmallow is predictive of its future success in life.[12] What does this mean for our children who are growing up in an environment where we check our smartphones on average about 262 times per day or once every 5.5 minutes?[13]

And how does the loss of the 'linear literary mind' affect our spiritual life?

IV. The Necessity of the Linear Literary Mind for Spiritual Aspirants

Deep book reading gives one the ability to engage in deep concentration and focus and also helps us to cultivate our feelings and willpower, which has already been explained above.

Hence, whether we are a jnana yogi, raja yogi, bhakta, or karma yogi, concentration and focus are the prerequisites in any of these paths. The *Yoga Sutra*s stress that we must first be able to

concentrate the mind on external objects, and then turn this focused mind on itself to gain higher spiritual knowledge. This is arguably when spiritual life begins. Similarly, in the path of knowledge, without concentration, how will one be able to discern between the real and the unreal? Hence, if we are losing the ability to focus on external objects (like deep reading), what hope will we have to succeed in the spiritual world?

In the practice of *karma yoga*, we must feel for the suffering of others and then try to ameliorate their suffering. Similarly, in the practice of *bhakti yoga*, we must be able to cultivate and purify our emotions and direct them towards the divine. However, studies show that by spending an inordinate time in the virtual world, children are beginning to neglect and not properly cultivate their relationships with their parents, teachers, and friends. Our scriptures say that respect and love for our parents, teachers, and friends is a prerequisite for any spiritual path. Without first cultivating a loving and sympathetic heart, it is very difficult to make progress in the path of Karma yoga or Bhakti yoga.

Finally, in any of the yogas, a strong will and determination are required. As Swamiji says, spiritual aspirants need 'gigantic wills which nothing can resist, which can penetrate into the mysteries and secrets of the universe and accomplish their purpose in any fashion even if it meant going to the bottom of the ocean and meeting Death face to face'.[14] But what we are seeing is that excessive use of the internet diminishes our willpower and makes us superficial thinkers.

One might wonder, at this point, whether the '*literary linear mind*' is needed for spiritual progress. After all, there have been many exemplary spiritual luminaries who were even unable to read. Although it is beyond the scope of this paper to explore this topic, we will briefly answer in two ways. Firstly, being great spiritual souls, they are exceptions to the rule and we should not compare ourselves to them. Secondly, an interesting reply is given by Sri Ramakrishna to this in his *Gospel*. In the middle of a debate, Dr Bhaduri tells Dr Sarkar: 'What I have just said you will find in the Vedanta. You must study the scriptures. Then you will understand.' Dr Sarkar replied: 'Why so? Has he (meaning the Master) acquired all this wisdom by studying the scriptures?' Master then replied: 'But how many scriptures I have heard.'[15]

In other words, Sri Ramakrishna had perfected the ability to concentrate and receive information from others through hearing. In fact, in older days, scriptures were referred to as *śruti* because they were transmitted orally, rather than through reading books. Ancient Vedic culture emphasised receiving scriptural knowledge through the threefold process of *śravaṇa* (hearing), *manana* (reflection), and *nididhyāsana* (assimilation). However, in the present-day situation, society does not fully support the transmission of knowledge through these processes alone. Hence, the need to engage in deep reading to help cultivate the faculty of concentration.

V. Practical Tips for Using the Internet Mindfully and Beneficially

Here are five practical tips on how spiritual aspirants can use the internet mindfully and beneficially:

(1) *Incorporate the practice of reading printed books into our daily lives*. The importance of reading printed books—not on a computer but in real-time—cannot be overstated. As we have discussed, we must take proactive steps to strengthen our 'linear literary mind' for the sake of preserving some of our fundamental mental traits like the *ability to think, feel,* and *will* with intensity and extensivity.

(2) *Apply the process of discernment in virtual time*: It is sometimes tempting to temporarily relax our concentration and discrimination, surrender our willpower, and abandon our sense of morality when we enter into the virtual world. However, as we have discussed, our virtual browsing does have real-life consequences. In *Meditation and Spiritual Life*, Swami Yatiswarananda advises spiritual aspirants to apply the sword of discernment even in the dream state.[16] One senior monk added that we should 'sleep with the sword underneath our pillow and be ever-ready to slash away *maya* even in the dream state'. Similarly, when engaging in the virtual world, we must be ready to apply our sense of discrimination and not get carried away by its maya.

(3) We should be very conscious in our dealings with the internet and avoid the tendency towards passivity in the virtual world. How? One way is to cultivate discipline by setting boundaries for ourselves for using the net. We should limit ourselves to using the internet at specific times during the day and avoid going online at bedtime or before going to sleep. Secondly, when we are watching a YouTube video on Vedanta, we should actively pay attention, rather than simply passively listening. We should be active participants, mindful observers, and critical thinkers while watching the net. Techniques include taking notes, pausing the video to check if we can recall what the speaker has said, writing down questions that you would have for the speaker, and seeking answers.

(4) Once we leave the virtual world, let us go and interact with the real world. This means meeting people, having live conversations, cultivating meaningful human relations without the smartphone, and engaging in the selfless service of others with friends. One nice way to cultivate human relations is to get together, go and do service to society in a homeless shelter or an Ashrama, and so on.

(5) Use the virtual world to supplement and enrich our real world and spiritual world—but not to replace them. The internet is a wonderful tool to help us spread the universal message of Vedanta, simplify our lives, save time, and free up our mental energies for creative spiritual pursuits. Always remember that it is a supplement to enrich our spiritual life. PB

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Digital Gods and Spiritual (R)evolution

Swami Jnanishananda

Wake up, Neo

NEO, THE PROTAGONIST, is asleep at his desk and suddenly the computer screen in front of him lights up with the words, '*Wake up, Neo...*' and voila, he opens his eyes!

Amongst all the man vs machine encounters portrayed on the silver screen, 'the Matrix' released in 1999 shattered all our previous notions about a docile digital world by offering a spine-chilling narrative—what we perceive as a physical world is just a virtual projection fed into our brains by the matrix or A.I. (Artificial Intelligence) so that they could use humans as energy sources.

Fast-forward two decades and we now have A.I. camouflaged as a smart device in our pockets or wrists, invading our privacy to such an extent that we would rely on it to tell us whether we slept well or if we needed to take a walk. An employee from one of the biggest tech giants in the world told me that they do monitor whether an android phone user is walking, standing, sitting, or lying down.

Whether we like it or not, A.I. or Artificial Intelligence will have a tremendous influence on our daily life and the world around us going forward.

Artificial Intelligence Sets the Narrative

Let us examine some illustrations of how A.I. does effectively enhance our experience of this physical world and also pose an imminent threat to humanity.

- ***Pushing the Biological Limits***: Most of the intellectual pursuits, sports, and even creative avenues like fine arts and music are being influenced heavily by A.I. based algorithms which enhance the skill set and thereby push the frontiers which were otherwise set by the biological limits of a normal healthy human being.

  In his Forbes Tech Council article, Alex, the CEO of Skylum,[1] points out the transition of creative decision-making from the realm of subjectivity to that of objectivity and data. According to him, data is quickly turning the

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IMAGE: HTTPS://WWW.MAXPIXEL.NET

entire creative decision-making process into a 'cold, hard science'.[2] He also gives a few instances of how creative decisions are backed by objective data: 'When a record label signs a new artist, it wants to see Spotify[3] data signalling this artist's fanbase is trending up and to the right. When a car manufacturer hires an advertising agency and asks for creative campaign ideas, it wants those ideas to be backed up by data that signals emerging demand.'[4]

He then goes on to say how creative decision-making of the future will be more of a science than an art. 'In many ways, it already is. We now have so many ways to measure the effects of our actions that we would be naive to think we, subjectively, can do better on our own. The truth is that we can't, and the more we can trust technology to perform the tasks we are less equipped to handle, the more effective and valuable we will be in other areas of our lives.'[5]

- ***Manipulating Minds***: A Princeton University study on how social media affects election outcomes, conducted by professors from the Department of Economics, concluded based on evidence from the United States that Twitter's relatively liberal content can persuade voters to alter their views.[6] Companies like Facebook are already contemplating the use of Artificial Intelligence to weed out fake narratives.[7]
- ***Level Playing Field***: Technological advancements have also contributed towards empowering the differently-abled and marginalised sections of society. Technology offers them a level playing field that was otherwise tilted in favour of the physically stronger majority.
- ***Connectivity***: Technology also helps one overcome physical limitations and reduces the barriers separating humans from each other and the physical universe. Enhanced relief measures are possible during a crisis, thanks to technology, by mobilising even remote resources in a timely and effective manner. During the recent lockdown due to the Covid pandemic, going digital was the only option available for people to interact with the rest of the world.
- ***Online Resources***: Increased access to the Internet has liberated education from the clutches of an archaic system that could otherwise set a narrative or run propaganda. For example, people, for the first time, have access to the unbiased history of ancient Indian civilisation and facts regarding Hinduism, which were hitherto suppressed or distorted by the colonial era educational system that portrayed everything Western as something superior to what Indians thought and did centuries ago. Digital archives can help a great deal in setting a neutral narrative, less filtered by regional and religious biases.
- ***Intellect Worship*:** Swami Vivekananda had warned us long ago that Education is not the amount of information that is put into our brain and runs riot there, undigested, all our life. He said: 'If education is identical with information, the libraries are the greatest sages in the world, and encyclopaedias are the Rishis.'[8] But we continued to evaluate academic success based on good memory, analytical and logical skills, and the like. Other human qualities like empathy, EQ (Emotional Quotient), and so on found no place in contrasting excellence with mediocrity. However, with advanced machine learning techniques, recording exponential improvements in the analytical and logical capabilities of A.I. to educate itself, we should soon see more aspects of human intelligence brought into comparison while scrutinising human excellence in every field. *Wisdom should finally take predominance over mere intellect.*

Coming to the threats A.I. poses, the fundamental question we need to ask is whether it has any moral obligation towards preserving humanity or not.

- **Moral foundation**: Unlike humans, there is no moral foundation behind artificial intelligence. So it can easily be made to believe that humans are a threat to the universe itself. Hence, AI can be worse than human terrorists.
- **Altering Social Goals**: While alcohol or drugs could capture only a minuscule portion of the society as addicts, a digital world governed by A.I. has the potential to manipulate the very goals that society would strive towards.

In general, the danger is not so much from A.I. or the digital world itself than from a person's natural propensity to look outside of oneself for fulfilment. We find in the *Katha Upanishad*:

> **पराञ्चि खानि व्यतृणत्स्वयम्भूस्तस्मात्पराङ्पश्यति नान्तरात्मन् । कश्चिद्धीरः प्रत्यगात्मानमैक्षदावृत्तचक्षुर–मृतत्वमिच्छन् ॥**
>
> The self-existent Supreme Lord inflicted an injury upon the sense-organs in creating them with outgoing tendencies; therefore, a human perceives only outer objects with them, and not the inner Self. But a calm person, wishing for Immortality, beholds the inner Self with eyes closed (sight turned inwards) [Nikhilananda].[9]

As long as we look up to the outer world to give us pleasure or a sense of fulfilment, the virtual world created by A.I. would impinge onto us a much greater scale than the physical universe could ever possibly be. For instance, the happiness and misery induced by a distant event can cause realistic reactions in a person when it is brought into his or her senses by the digital world with a hitherto unimaginable sense of realism, thanks to A.I. His or her physical, emotional, and mental states would then be deeply affected by the virtual event—whereas, in the physical world, the sheer distance would have been a saving grace preventing people from getting affected by such remote events.

A Virtual Reality (VR) experiment on height exposure found participants behave in VR exactly as would be appropriate in a real environment. Aligned with the behavioural responses, they showed realistic psychophysiological responses, that is, an elevated heart rate when exposed to height.[10]

Intellect vs Intelligence

The term Artificial ***Intelligence*** is a misnomer. Of course, the term fits the dictionary definition of 'intelligence' as 'the ability to acquire and apply knowledge and skills'. Sadly, most widely accepted definitions of human intelligence also limit themselves to such objective descriptions of what a human being is capable of. However, if we include the definitions set forth by the ancient Vedic civilisation, which studied human psychology and other metaphysical aspects of existence to a far greater extent than any other known civilisation in the world, the entire gamut of these objective descriptions can fit into a single aspect of intelligence, called the intellect or *buddhi*.

Thus, Artificial ***Intellect*** would be a more accurate term to represent this technology, if we ignore the utopian ideas of AI coming to life with consciousness and concentrate on the real practical challenges it poses and the advantages it provides.

Although a developed intellect helped mankind dominate the rest of the species on earth, AI can make human intellect look puny with its gigantic ability to crush any competition in terms of sheer memory and calculating powers.

Imitation and knowledge gathering alone cannot fulfil the purpose of being human. To what extent we are ready to push human aspirations and enlighten ourselves with what we are capable of beyond the dimension of intellect, would determine how well we tame this powerful beast of superhuman intellect.

Beyond the Intellect: Inspiration

So the question naturally arises: what is there beyond intellect? The lowest instrument of

knowledge is instinct, highly developed in animals. Then comes reasoning which is most highly developed in a human being. Instinct is adequate in animals as their sphere of action is limited to fulfilling their survival needs. Once their survival challenges are overcome, they do not aspire for higher pursuits. However, when it comes to humans, we notice that although common people are usually caught up in making their ends meet, meeting their survival needs alone does not satisfy them. Once the struggle for existence is overcome, one's intellectual faculties start posing curiosity challenges, which have resulted in great discoveries and inventions throughout human history including the digital world and AI.

Yet, even intellectual pursuits hit an adamantine obstacle when we start questioning the reason behind our existence and that of the universe. Reason cannot reach there and it itself becomes unreasonable. Logic becomes, to quote Swami Vivekananda, an 'argument in a circle'. Swamiji says:

> This world, this universe which our senses feel, or our mind thinks, is but one atom, so to say, of the Infinite, projected on to the plane of consciousness; and within that narrow limit, defined by the network of consciousness, works our reason, and not beyond. Therefore, there must be some other instrument to take us beyond, and that instrument is called inspiration.[11]

The realm of inspiration, lying beyond the intellect, alone is true intelligence as it offers wisdom and does not contradict the preceding stages of instinct and reason.

Propitiating the Digital Gods for Spiritual (R)evolution

So long as there are inspired men and women in this world, AI or any other form of advanced intellect cannot bring the whole world to ruin.

However, inspiration is not an everyday occurrence and the whole purpose of leading a spiritual life is to make our body and mind fit for receiving inspiration from the superconscious realm, thus leading us to the supreme goal of Self-realisation.

Spiritual practices require *time* and *energy* irrespective of one's station in life. Since both are limited in supply, we do not have the luxury of gradual evolution. What we need is an inner revolution! In Vedic times, people would propitiate the gods to fulfil their desires pertaining to this world and the next. Similarly, we could use AI and other digital 'gods' in our daily life to save these two precious but limited resources—time and energy, and race through our journey from reason to inspiration, consciousness to superconsciousness, *from human to God*.

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Evolution of Meditation Research: Perspectives from Contemplative Neuroscience

Swami Paramashivananda

1. Introduction

At the dawn of the 20th century (April 1900), Swami Vivekananda delivered a powerful lecture titled 'Meditation' in San Francisco, California, where he proclaimed: '*The power of meditation gets us everything. ... It is through the power of meditation all scientific facts are discovered today. ... Therefore, the practice of meditation is the great scientific method of knowledge. There is no knowledge without the power of meditation*.'[1] It is imperative that meditation as a contemplative science should be studied and researched, because it serves as a basis for generating invaluable scientific knowledge beneficial to human society.

In the Eastern culture, meditation as a spiritual practice had always been a subjective science and the focus of internal research in the Yogic, Vedantic, and Buddhistic traditions. In contrast, the Western world has always favoured the empirical method of gaining knowledge through outer experience, which when applied to the mind, has led to the rise of cognitive sciences. The benefit of an objective approach is that competent observers can observe and evaluate the authenticity of the experience, thereby improving the methodology—while with a subjective approach it is difficult to judge since the experience is private to oneself.[2]

Contemplative neuroscience is the use of cognitive neuroscience to study contemplative practices like meditation, yoga, and other spiritual disciplines. With the advent of the study of brain activity utilising neuroelectric and neuroimaging techniques, meditation has become a research topic for contemplative neuroscience. This has facilitated elaborate objective studies with a detailed scientific classification of existing meditation practices along with the systematic testing of various meditation techniques to resolve the neural activity in the brain during the time of meditation.

The scope of this article is limited to reviewing meditation research from the perspective of spirituality practised in contemplative traditions and not as clinical practice for general well-being. The reason is that in the modern context, meditation is being proposed and taught in clinical settings to bring about physical well-being, mental well-being, and to enhance cognitive and affective skills, while in the traditional context, physical and mental well-being are pre-requisites to begin meditation practice.[3]

2. Meditation—Scientific Definition and Scientific Classification

2.1. Scientific Definition

Contemplative practices across a variety of religious traditions over the years with further

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Westernisation have made meditation a 'generic' term. Even regular meditation practitioners would have difficulty in characterising meditation either as a 'method/technique' or a 'state/experience'. The popular media coverage of meditation globally has further diluted the understanding of the meditative practice by attributing simplified cognitive functions such as relaxation, reflection, and attention as meditation. The key issue with neuroscientific research of meditation was the lack of an operational definition among researchers.[3]

So, a working definition for meditation was proposed, which would help evaluate qualitative aspects of meditation uniformly across neuroscientific research. The neuroscientific literature had two popularly used definitions of meditation with one defining meditation essentially as a family of mental training techniques—for example, 'focused attention', 'open monitoring'[4, 5] known as 'method' definition, while the other group has defined meditation by reference to the enhanced experiential states that arise from the use of methods—for example, 'non-dual awareness'[6] known as the 'state definition'.

Based on the scientific hypothesis devised[7], the following definition had been proposed:[8] Meditation is defined as a family of complex practices[i] in cognitive, affective (or) non-cognitive/non-affective[ii] domain that is deployed by volition[iii] intrinsically/extrinsically[iv] from a normal baseline state[v] with the intention[vi] of attaining an enhanced mental state[vii] as a short-term[viii]/long-term[ix] outcome.

(*Notes for the definition*: (i) Methods may contain concentration, mindfulness, focused awareness, passive observation, memorisation, and repetition of certain words, self-inquiry, contemplation, imagination, visualisation, and perception of sounds, lights, and bodily sensations. (ii) Non-cognitive/Non-affective directed methods create an enhanced empty state that is devoid of phenomenological content. (iii) Excluding hypnotic methods and usage of mind-altering substances. (iv) Intrinsic (Independent) means 'Self-guided', while Extrinsic (Dependent on outside person/process) means 'being externally guided'. (v) Pre-meditative stage of normal waking/resting consciousness, where one is mentally occupied with mundane thoughts, feelings, and regular activities of daily life. (vi) Deployment of a particular method doesn't necessarily guarantee success in attaining to an enhanced mental state. (vii) Commonly known as meditative state—an altered state of consciousness with focus, calmness, detachment, insight, emotion, bliss, emptiness, and so on. (viii) Short term outcome—the 'state effect' with experiences that immediately transpires during the meditation practice. (ix) Long term outcome—the 'trait effect' that makes permanent changes to the personality trait of the person after multiple meditation sessions.)

2.2. Scientific Classification

With the complexity and diversity of meditation techniques, researchers were facing taxonomic difficulties in classifying meditation. Failure to distinguish various meditation practices is similar to the usage of the generic terminology 'vehicle' with the presumption that it refers to 'car', truck', or 'van', as if they are all essentially one and the same. Over the decade of neuroscientific research, the following three categories were proposed:[6, 9]

(a) FA (Focused Attention)
(b) OM (Open Monitoring)
(c) NDA (Non-Dual Awareness)

2.2.1. FA (Focused Attention) Meditation

FA meditation involves focusing and sustaining selective attention on a specific mental

or sensory activity such as a repeated sound (*mantra*), an imagined/visualised image (chosen visual deity), or a bodily sensation caused, for instance by respiration (focus on breathing). When distractions arise and attention wanders away from the chosen activity, a practitioner is generally instructed to recognise this mind wandering and to subsequently disengage the attention from the distraction and redirect attention to the intended activity. FA meditation is often used as a basic and foundational practice (*Dhāraṇa*), with the goal of training various aspects of attentional control before undertaking more advanced or specific practices.[5] An example of FA meditative practice is mantra-based meditation similar to the one practised by monks and devotees of the Ramakrishna Order.

2.2.2. OM (Open Monitoring) Meditation

OM meditation involves non-reactive and non-judgemental monitoring of the content of ongoing experiences, without focusing on any specific object or activity. The initial use of FA meditation is to calm the mind and reduce distractions. As FA advances, the monitoring skill becomes the main point of transition into OM practice.[5] Examples of OM meditative practices are Theravada Vipassana meditation and Buddhistic mindfulness-based meditation.

2.2.3. NDA (Non-dual Awareness) Meditation

NDA meditations (Pure consciousness functioning with experiences) employ a non-dualistic orientation that relies on a background awareness that precedes conceptualisation and intentionality and is inherently free from the dualistic subject-object construct.[10, 11] They facilitate experiencing the natural unity, free from opposing dualities such as, for example, inside-outside, self–other, and good–bad.[6] NDA meditations do not typically involve intentional effort, while FA and OM meditations rely on some degree of effort, which decreases with proficiency, leading to effortlessness in more advanced stages.[12]

'There are two aspects of non-duality: (a) non-duality without experiential content, also known as "pure consciousness" in Vedanta or "isolated clear light" in Tibetan Buddhism; which is Absolute only; and (b) non-duality with full experiential content; a.k.a "open presence" in Tibetan Buddhism, *Saguna Brahman* of Vedanta, in other words, the unity of Absolute and the Relative.'[13]

3. Meditation—Neuroscientific Research and Neurophenomenology

3.1. Neuroscientific Research and Neurophenomenology

With the advent of cognitive neuroscience, meditation has been transformed into a contemplative science to provide the scientific community with a mechanistic model of how meditation works in correlation with neural activity in the brain. Further, the combination of 'first-person descriptions' of subjective experience, intrinsically obtained from 'meditation states', with 'third person data' acquired extrinsically from neuroelectric/neuroimaging data of the brain has resulted in a new research methodology called *neurophenomenology* that attempts to evaluate and understand the qualitative aspect of meditation practice with higher accuracy.[14, 15] Thus, the modern neuroscientific research of meditation, which adopts neuroelectric and neuroimaging methods to map the brain activations during meditation, applies neurophenomenology to bridge subjective experiences with objective neural states (*Figure 1*).

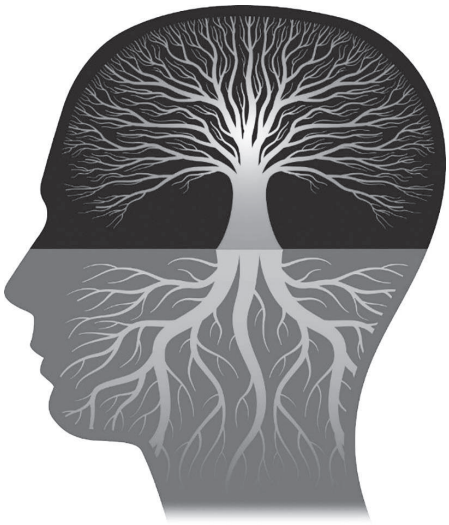

Figure 1: Abstract representation of neurophenomenology that bridges the individual's subjective experiences with objective neural states

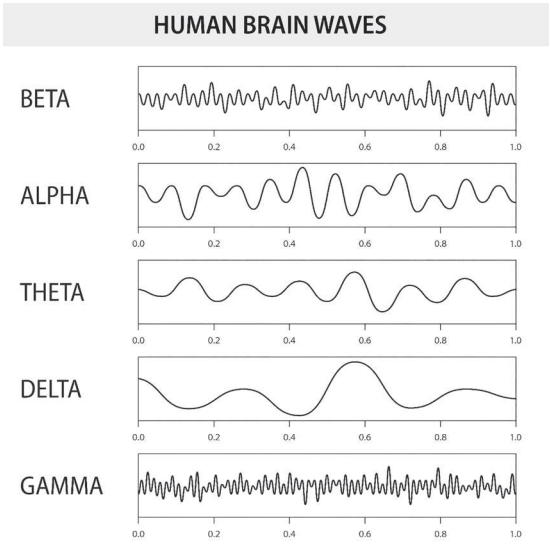

Figure 2: Human Brain waves

3.1.1. Neuroelectric Signature of Meditation

EEG (Electroencephalogram) signal is a possible objective measure of meditation ability since electric signals are sensitive to meditation changes and thereby modifying the neural correlates associated with meditation.[16] Since each meditation category could be identified by a unique cognitive process, attempts have been made to associate meditation categories with unique EEG signatures.[9] While deriving the meditation signature, studies indicate that meditation technique, meditative experience, individual length of practice, and personal characteristics play a significant role and produce a unique signature.[17–19]

An example of the neuroelectric signature of meditation is that which is experienced by long-term meditation practitioners. They exhibit high amplitude synchronised gamma waves which indicate 'highest quality of meditation by an expert meditator'.[20] (*Figure 2*) (This doesn't mean gamma waves are always indicators of highest quality of meditation as these waves are also observed in some epileptic seizures.) In a neurophenomenological sense, these give a subjective impression of fusion of subject and object with 'dissolution of boundaries' or transcendence including the perception of unity and coherence.[19] (*Table 1*)

Meditation expertise	EEG band	Neuroelectric signature	Experiential aspect (Subjective)
Expert (long-term) meditators	Gamma	Gamma synchrony in parietal and temporal regions (or) occipetal regions.	Experience of 'dissolution of boundaries' or transcendence, including the perception of unity and coherence.

Table 1: Neuroelectric signature of meditation (long-term meditators)

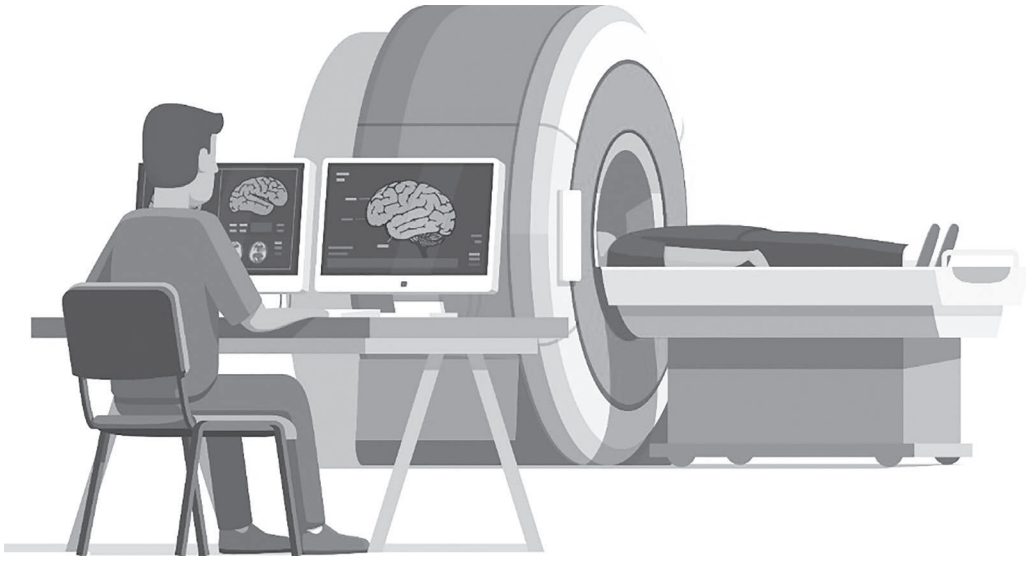

Figure 3: fMRI Scanning

3.1.2. Neuroimaging Signature of Meditation

fMRI (Functional Magnetic Resonance Imaging) utilises the underlying principle of MRI (Magnetic Resonance Imaging) to produce high-resolution representations of neural activity over time (*Figure 3*). fMRI technology takes advantage of the signal intensity of haemoglobin within the brain—the protein in the blood that carries oxygen to cells. The ability to examine changes in oxygen metabolism in the brain over time serves as an indirect measure of neural activity. fMRI can produce images with a high spatial resolution (the ability to map neural activity in the exact location of the brain) of less than a millimetre and can enable us to identify the activations/deactivations in the brain with higher location accuracy.[21]

DMN (Default Mode Network) is a group of anatomically separate regions in the brain that are active when the brain is involved in mind wandering, mental rumination, autobiographical memory, and self-reflection.[22] The major nodes of DMN involve mPFC (medial PreFrontal Cortex), ACC (Anterior Cingulate Cortex), PCC (Posterior Cingulate Cortex), and PCU (Precuneus).[23, 24] In a typical meditation session, the meditator is cyclically involved in the following four states that involve mind-wandering, awareness of mind-wandering, shifting back to meditation, and sustaining focus[25] (*Figure 4*). While scanning the brain of a meditation practitioner using fMRI, the PCC and PCU were activated when the practitioner's mind was wandering.[26] The impact of FA meditation and OM meditation was studied in long-term meditators and it was found out that main nodes of DMN were deactivated in the case of experienced meditators.[27] Deactivation in PCC and PCU seems to be a neuroimaging signature of a meditative state (*Table 2*).

Brain Region	fMRI Signature
Posterior cingulate cortex (PCC) and precuneus (PCU)	Deactivation in PCC and PCU

Table 2: Neuroimaging signature of meditation (long-term meditators)

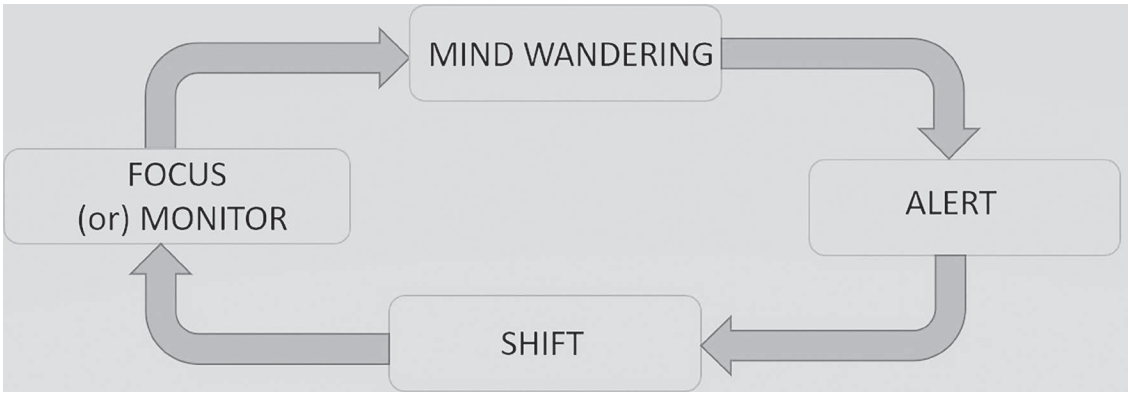

Figure 4: FA meditation state machine [15, 25]

4. Research on Visualisation in Meditation Practice

4.1. Visualisation Based Meditation

Visualisation based meditations are common in contemplative practices across Hinduism and Buddhistic traditions. As one of the Hindu Tantric yoga traditions, the practice of meditation involves focusing on the internal visualisation of a chosen deity with mantra repetition typically sitting in *Padmāsana* or lotus posture with closed eyes. The meditator attempts to visualise the chosen image deity, thereby cultivating FOCUS while at the same time MONITOR for distraction. The practitioner SHIFTS attention back to the visualisation when MIND WANDERING is ALERTED by an individual's meta-awareness (*Figure 4*). The mantra recitation engages verbalisation that augments the effects of visualisation which otherwise could lead to mind-wandering[28] due to auditory absence during visualisation, especially in novice meditators. A good comparison is to observe engagement levels of an individual who watches a silent movie where the individual tends to get distracted within short duration since visual engagement is only present while auditory engagement is absent.

4.2. Clarity and Stability in Visualisation-based Meditation

In a visualisation meditation practice, the quality of the meditation is attributed to the stability and clarity of the visualisation. Clarity refers to the sharpness or vividness of the appearance of the chosen image, while stability refers to holding the focus on the chosen image without being distracted by wandering thoughts and sensory perceptions. According to earlier scientific research, the mentalisation of a visual image for a long time was thought to be impossible as the images will fade in a matter of seconds because of the low capacity of visuospatial memory.[29] But, in a breakthrough scientific study conducted on long-term meditation practitioners, new findings indicated that monks were able to hold the visualisation for hours with high clarity and no major distraction[30] dispelling the myth that visual working memory cannot be enhanced. With repetitive practice, this manner of focused thinking and visualising can become habitual for practitioners, instead of random mind wandering or mental rumination that occurs commonly during everyday activity.[28]

5. Research on Factors Influencing Meditation—'Person' and 'Practice' Variables

5.1. 'Person' and 'Practice' Variables Influencing Meditation

The 'Person' variable indicates the characteristics of the meditator and the 'Practice' variable refers to the nature of specific meditation practice practised by the meditator. 'Person' variables include personality traits such as temperament and character, expectation and motivation of the meditator, meditation training (details of meditation training including age at the commencement of training, type of training, regularity and duration of practice, preference for specific meditation practice). 'Practice' variable indicates the detailed procedure of the meditation practice that could be replicated, specific lineage or tradition that it is based upon, posture, eye attitude (open/closed), and attention direction (visualisation, breathing, body sensations, auditory repetition, and so on).[31]

5.1.1. Personality Traits—Temperament and Character of the Meditator

Specific temperament and personality traits seem to influence individuals engaged in a long-term meditation practice spanning their entire life.[32] The scientific measure of personality and temperament (Temperament and Character Inventory)[33] have been shown to correlate with meditation performance.[34]

5.1.2. Expectation and Motivation of the Meditator

The expectation in meditation practitioners usually refers to a yearning for a certain feeling or experience or a higher state after the meditation practice. The continual anticipation of a higher state/experience would often hinder the practice if things do not proceed as expected. For meditation practitioners, one of the helpful ways to think about meditation is to pay attention to the means—the process of meditation where one learns to maintain focus and train one's attention to be on the present-moment experiences, rather than the end result of attaining to a higher state/experience. Additionally, the key to meditation is to accept all experiences with a non-judgemental and non-reactive attitude.[35]

5.1.3. Effortful vs Effortless Practice by the Meditator

One of the important aspects of meditation practice is the amount of effort utilised in attaining the meditation state. The initial meditation practice involves significant exertion required to maintain the focus for the entire period of meditation practice. The reason for exerting a lot of effort is often due to the higher tendency of mind-wandering, typically seen in novice meditators. Expert meditators who are at an advanced stage of practice, tend to use minimal energy to stay focused as their mind-wandering has considerably reduced due to their long-term practice. One of the key factors distinguishing novice meditators from expert meditators is to check if they deploy an effortful or effortless practice respectively to attain the meditation state.[35]

5.1.4. Long-term Contemplative Practice vs Short-term Secular Practice by the Meditator

Meditation has predominantly been established as a long-term contemplative practise within the boundaries of traditional centres of learning with a proven time-tested system under the guidance of an experienced meditator. In many ancient traditions, the meditation technique

is taught to a disciple (student) by the Guru (experienced teacher), who understands the individual characteristics of the disciples and instructs them accordingly. But, in the modern digital age, with the expansion of short-term fast-tracked secular meditation approaches with limited guidance from inexperienced instructors, we do not find the comprehensive knowledge and training system to deal with adverse experiences of meditation.[36] In the contemplative yogic traditions, *Yama* (abstentions/restraints) and *Niyama* (observances/disciplines) are pre-requisites to practise meditation.[37] Without attaining minimum purity of mind through *Yama-Niyama*, if one attempts to meditate for a longer period, concentration will converge on the impurities of the mind, which is dangerous in the early part of the contemplative life.[38]

6. Research on Unifying Scientific Theory of Brain and Meditation

A unifying scientific theory of the mind, brain, and behaviour, has been missing until more recently.[39] An eminent neuroscientist, Karl Friston, whose theory of 'Free Energy principle'[40] (and predictive processing using Bayesian approach) is gaining greater scientific traction, and this might be the most all-encompassing idea since Charles Darwin's theory of natural selection.[41]

The second law of thermodynamics states that the universe proceeds towards entropy or dissolution, but living organisms resist it by maintaining themselves as a separate entity from their environment.[41] To survive, an organism (brain in neuroscience) has to be proactive by retrieving its past experiences from the memory to interpret the stream of sensory information that is being directed at them so as to predict the immediately relevant future.[42] To improve its predictions, the brain attempts to minimise the difference between its predictions and the sensory input information (that is, free energy or prediction error).[39]

Let us try to understand this concept with the help of an example. In a game of cricket, a batsman facing a delivery from a pace-bowler (in order to avoid losing the wicket) has to proactively do a quick mental scan and assess the various types of deliveries (reverse swing, yorker, slow-ball) that the bowler has bowled in the past. Now, while the bowler bowls, the batsman (with external eyes) gets real-time visual sensory data such as the bowler's speed of releasing the ball, the direction of the ball delivery, and correlate these with the bowler's type of deliveries bowled in the past. With this comparison, the batsman makes a prediction about the type of delivery expected from the bowler so that the batsman can adapt and bat accordingly with a minimum 'expected surprise' (when the prediction error is minimal).

Having a mind that is constructed based on past experiences is beneficial in many circumstances, since it is adapted to align the individual's needs within its environment. Yet, a mind that too often dwells into habitual thinking patterns becomes stubborn and rigid, and is not flexibly adapted to changing situations.

Meditation does exactly the opposite—aims at deconstructing the mind from within, allows one to experience things afresh, and enables one not to be determined by acquired mental habits thereby emphasising the reduction of habitually generating predictions based on past experience. FA, OM, and NDA meditations gradually bring the practitioner more into the present moment, thereby reducing the mental ruminations from the past and inhibiting deep predictive processing in the brain. In addition, meditation enables insights or Aha! moments (A good example of

an Aha! moment is the famous chemist August Kekule's vision of a snake biting its tail, a dream that supposedly revealed the true structure of the benzene ring). These instantiate fact-free learning which involves the discovery of a solution, idea, or perspective without new information.[39] Overall, meditation in contemplative traditions provides greater insights into the purpose of life by deconditioning the predictive mind, which typically projects the past onto the present.

7. Overemphasis of Neuroscientific Studies in Meditation Research

Modern-day meditation research is a multi-disciplinary field where philosophy, spirituality, and STEM (Science Technology Engineering Medicine) subjects such as psychology, neuroscience, signal/image processing, and deep learning are involved. But many times, neuroscientific explanations (even when neuroscience information is irrelevant to the logic of the explanation) are more persuasive to the common people (and even non-neuroscience experts) and they supersede alternative better explanations given in other fields such as philosophy or psychology.[43] For neuroscience experts, this is not the case, as they disregard neuroscientific evidence if it is not relevant to the explanation.[36]

As the foundation of neuroscience is built upon the idea of a material basis of the mind,[44] the brain has taken centre stage, rooted in neurobiological and neurochemical aspects.[45] One of the objectives of meditation in the contemplative traditions is to move away from gross matter and observe the subtler phenomena. But the neuroscientific studies may be doing the opposite by swaying the meditation practitioner to ideate on the 'material brain' rather than the 'subtler mind'.

8. Future Directions

In the past two decades, meditation research has come a long way from the infant phase to the adolescent phase. In recent years, meditation and contemplative neuroscience have formed a powerful alliance, each supporting and reinforcing the other.[44] At this stage, neuroscience doesn't yet explain the spiritual aspects of meditation, but it gives a unique understanding of meditation by offering insight into the meditative processes that could actually help in improving the meditation practice. With this collaborative approach, the contemplative neurosciences have evolved rapidly and need to expand their research onto meditation-related experiences that defy conventional scientific logic. This would help a meditation practitioner recognise ways to deepen the spiritual experience and continue a disciplined approach to meditation,[46] in the quest for realisation of the ultimate Reality.

9. Conclusion

Since the dawn of human civilisation, human beings have had an uncanny capacity to develop innovations that are double-edged swords—which can both benefit and harm humanity.[47] As with any innovation, one finds time and again a conflict between dual forces entering the human race with one group favouring the innovation while the other group disapproving it. With a simple analogy of fire that helps in our everyday cooking but can burn our home if not vigilant, a better approach at this juncture is to encourage multi-disciplinary meditation research and thereby practising meditation so that it provides insight in understanding the fundamental purpose and essence of human existence.

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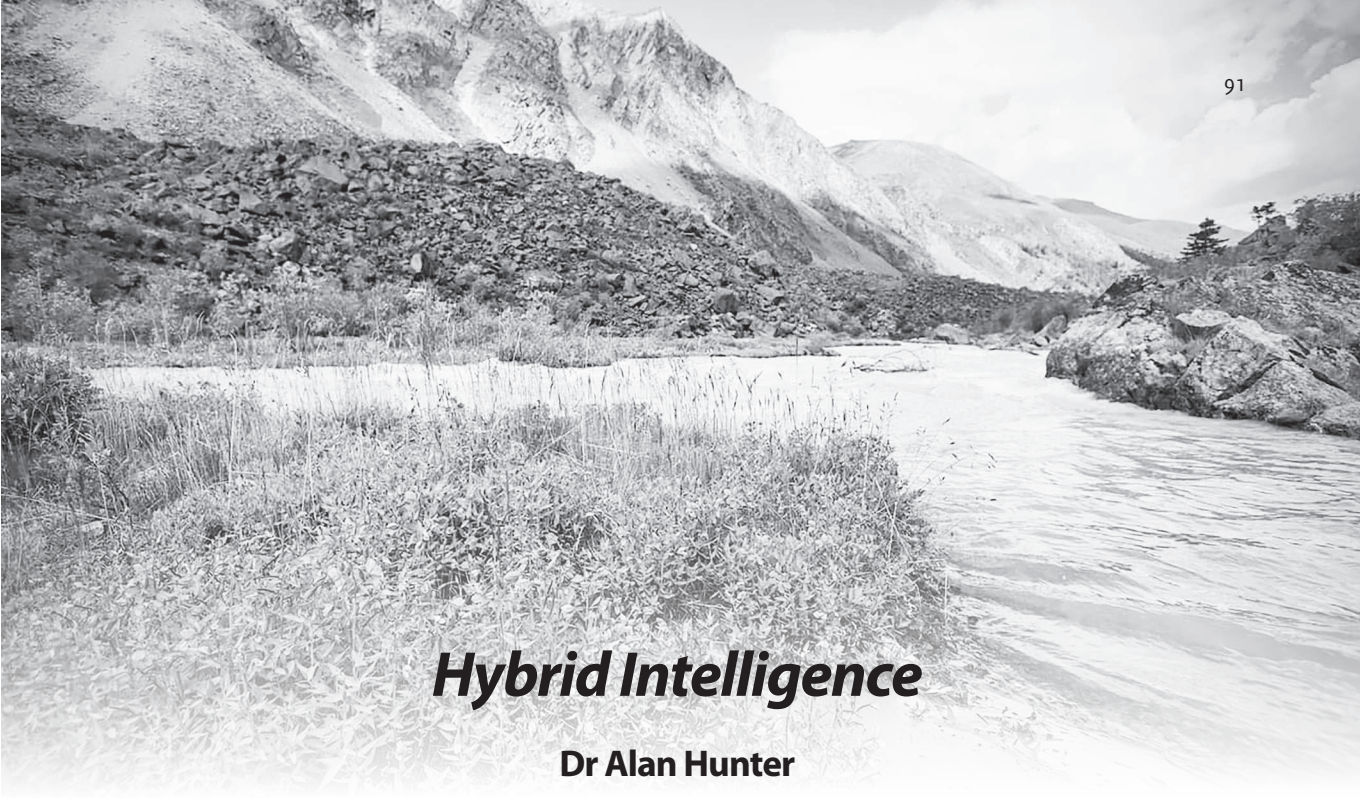

Hybrid Intelligence

Dr Alan Hunter

WE MAY NOTICE our breathing when it is obstructed by something like a bad cold, or perhaps when we practise breathing exercises. Breathing seems an individual, personal activity: we know intimately that our life depends on it. Yet we sometimes experience a wider perspective. Walking in a forest or on a hillside, we may notice that virtually all existence is breathing: every human, every animal, every tree, and every plant. Even most bacteria and fungi survive by different kinds of respiration, which form a part of the cycle of gas exchange in the atmosphere. My personal breathing is an infinitesimally small aspect of a vast process.

Equally, the personal water flow in my body, so essential to me, is barely a drop in the hydrological cycle of oceans, rivers, clouds, and subterranean reservoirs that flows through every living being. Yet, I seem to feel that my intelligence or my spiritual cognitions, if I have any, are rather personal; if I acknowledge its connectivity, it is probably with other people like my teachers, favourite authors, or friends. We know that breath and water have a universal vastness, yet we seem to feel most of the time that intelligence and awareness are restricted to ourselves and the people we admire. *Perhaps, we have just become blind to the vast expanses of the ocean of consciousness.*

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Super-complex Problems

In a previous article 'New Era, New Dimension' (*Prabuddha Bharata*, May 2021), I suggested ways in which we humans might unblock our potential for a higher dimension of intelligence. For example, we may be able to re-programme atrophied neural networks; integrate awareness with morality; move on from our fixed assumptions; and listen to the wisdom of nature. We do urgently need to improve our understanding and capacity to act. Many issues faced by human society today are intense, destructive,

IMAGE: HTTPS://PEAKVISOR.COM

unpredictable, and persistent. Various terms are used to refer to such issues: super-complex, Social Mess, or 'wicked' in the sense of resistance to the solution. Some characteristics are that each problem is essentially unique; stakeholders have widely diverging interests and approaches; partial solutions are likely to create further problems; there is no central authority; mistakes are very costly, and those seeking to solve the problems are also creating and maintaining them.

The pressures and fracture lines are well-known: food and water insecurity, environmental degradation, pandemics, climate change, fundamentalist politics, growing wealth disparities, and the like. It seems likely that maintaining peaceful and equitable societies in the coming decades will become ever more problematic; not least because technologies, economies, and populations are global, whereas most institutions and legal systems are national.

Humans are smart in many ways, but the advent of machine intelligence has clarified some of the limitations that are inherent to our species, or that we impose on ourselves. For example, compared to networked computers, all humans have very tiny memory capacity, slow calculations, partial access to data, and limited cooperation between different factions. Cognitions may be distorted by emotion or politics or other biases. We cannot use our brains after death, so much learning is lost. And we are often trying to solve problems that we are also creating.

Therefore, much decision-making, not least in the area of complex social issues, is substandard and far from optimal. The use of war to resolve disagreements, for example, is almost always immensely destructive while producing few long-term benefits for any party. The corona pandemic highlighted many structural weaknesses in the management of a global medical emergency. The virus itself was relatively simple to understand, at least in the terms used by allopathic medical science, but very few government structures proved up to the task of providing adequate protection for their populations. Maybe our restricted, heavily individualised view of the nature of intelligence contributes to causing these problems and failing to resolve them.

New Frontiers of Intelligence

Does the digital age allow us to explore new frontiers of intelligence? I believe it does, but so far only in limited ways. Here it may not be the place to move into terrain, until now the preserve of science fiction. However, the digital age has already multiplied human capacity for receiving and emitting electromagnetic waves. It is not impossible that humans will fulfil the dreams or nightmares of science fiction writers at some point in the future: we may find ourselves in communication with entities from beyond the solar system. Such contact would probably lead to a thorough revision of our most fundamental ideas and capabilities. Until recently, this possibility was dismissed as cranky or conspiratorial by mainstream institutions, but it is being treated a little more seriously by the 2020s.

However, irrespective of ET communication, humans are now in a position to enhance their intelligence and decision-making, far beyond what they could achieve in previous generations. Any such enhancement will be a two-edged sword: we might improve planetary well-being, or unfortunately, we may use the new opportunities to further damage each other and other species. Most likely, we will do both at the same time. This enhancement may arise in part through greater individual intelligence, perhaps provoked by the better opportunities for education and scholarly activity, personal reflection, meditation, or the emergence of religious or spiritual genius.

Beyond that, I believe that we may also be able to benefit from hybrid forms of intelligence: human-machine; human-plant; human-sub-atomic wave/particles; and many other possible combinations. Any of them may be an important step, at least in showing us the limitations that so far we tend to impose on ourselves. In fact, some of these processes have long been part of human culture, though under-acknowledged; maybe the time has come for more focused attention as technology advances. Most of these potential advances are beyond the reach of most of us in the general population: they demand highly specialist education, laboratories, and funding. However, one or two are open to all of us in our own garden or local park.

Artificial intelligence already far surpasses human beings in many modes of calculation and analysis. They can also, through intermediaries such as robots, drive physical operations such as production lines, financial transactions, and medical procedures.

So decision-making in a broad sense can be radically improved by co-operation with 'intelligent machines' that process far more data than humans, and without human cognitive distortions. Co-operation with machines is already leading to increased use of AI or 'Non-biological intelligence', especially since AI is increasingly used to control robots, sensors, transport systems, and other human-computer interfaces. A central question that arises is, how can powerful machine intelligence be directed towards human and environmental wellbeing, and not towards the self-interest of unaccountable elites or of the machines themselves?[1]

People with an interest in philosophy and spirituality may also consider if AI could play a role in cognition, for example, of universal truths. It will presumably become quite feasible for AI specialists to construct a 'virtual Sage', creating a super-intelligent hybrid that responds to people with altruism and compassion, backed up by entire libraries of scriptural knowledge, cosmological, psychological, and philosophical expertise. I wonder what would be the differences between an encounter with such a marvel, and with an 'enlightened' human?

Plant and Animals

Humans in recent centuries have generally taken an instrumental view of plants and fungi, that is, they are food for humans or animals, construction materials, contributions to attractive leisure spaces, or at least are useful to maintain a balance of gases in the atmosphere. A more sophisticated use is to explore their medicinal properties either as natural products or as extracts and re-combinations. Likewise, our main connection with mountains is perhaps a challenge for climbers, tourist resorts, or at the best as a natural heritage to be treasured as national parks and homes for local people.

However, there is growing awareness that the plant life of this planet may have its own 'intelligence' that we can start to explore from contemporary perspectives. There are some, though few, surviving indigenous traditions such as *Shamans*, native healers, and herbalists who feel that plants are intelligent life forms with which it is possible to 'communicate'. For example, plants may 'reveal' solutions for community conflicts, or give spiritual guidance. Perhaps, the Japanese tea ceremony could be considered in this light, where participants calm their minds and stimulate their reflective capacities in the company of *camellia sinensis* (*Camellia sinensis* or tea

Camellia Sinensis or Tea Plant

IMAGE: MANDEEP SINGH

plant is a fast-growing shrub used to make most traditional caffeinated teas).

The study of plants from a cultural perspective, *ethnobotany*, reveals that traditional Indian culture is exceptionally rich in this respect.[2] Flora informs myths, rituals, meditation, and daily life: for example, the pipal, banyan, ashoka, tulsi, bilva, and coconut. The founding poems of Vedic culture celebrate *soma*, an entheogen and divine medicine plant:

> We have drunk Soma and become immortal; we have attained the light, the Gods discovered. ... Absorbed into the heart, be sweet, O Indu, as a kind father to his son, O Soma. As a wise Friend to friend: do thou, wide-ruler, O Soma, lengthen out our days for living. These glorious drops that give me freedom have I drunk.[3]

I wonder, do the saints and sages who venerate these plants simply regard them as may be pretty but essentially insentient organisms? I doubt it. I believe they sense a deep innate intelligence, and they are wise enough to appreciate it.

Although plants appear different from animals in many ways, at a deeper biological level they have numerous similarities; and where they differ, they are often complementary.[4] For example, plants have mitochondria, DNA, chromosomes, and sugars, and they need light, air, and water. They respond to sun and moon. Many of them have male and female characteristics. They reproduce, move and breathe: in the case of plants, exhaling oxygen and taking in carbon dioxide during photosynthesis, the reverse of the animal process, balances the terrestrial atmosphere.

A key function of plants is to receive electromagnetic waves (light) and transform them into physical form through the process of photosynthesis: light energy becomes chemical energy. The process is mediated by chlorophyll which allows minerals from the earth, water, and air together with warmth and light from the sun to manifest as sugars and other components of plant life. These are the foundations of almost all food for animals including humans. Haemoglobin is complementary, in animal physiology, to chlorophyll in plants: it mediates respiration and helps convert sugars to movement and warmth. Incidentally, we see that the ancient concept of the elements—earth, water, fire, air—is perfectly illustrated by the life-cycle of plants and animals. Even Aristotle, a rather down-to-earth and logical scholar, believed that plants have some kind of 'soul' albeit of a different kind from animals and humans.

Similar observations could be made about other aspects of life on earth, and beyond earth. *Ancient cultures had tremendous respect for the spiritual components of animal intelligence.* Until recently, humans made some assumptions, which may seem ridiculous to us now, that animals are less intelligent than humans, because they do not perform well at many tasks that humans do easily! It would of course be equally logical to assert that humans are less intelligent than birds because they do not fly so well, or than squirrels, because they cannot climb trees so fast. At least scientists are moving forward, for example, having discovered that some birds deploy innate GPS far in advance of any human. But more fundamentally, indigenous cultures all report free and meaningful communication with animal intelligences, usually translated as 'animal spirits'.

We might consider many other claims and beliefs, for example, the teachings and blessings of rivers, mountains, planets, and stars. Again, India by itself would provide a treasury of examples. And many other treasuries are there to be seen in Australia, the Americas, and Africa.

In short, plants and animals are totally integrated, complementary, and balanced in the great harmony of the biosphere. Is it reasonable

to assume that only one species (human) is intelligent, inherently valuable, possibly spiritual, while the others (plants, animals, rivers, mountains) are just useful objects to be exploited?

It is probable that in the near future, there will be stronger links between plant intelligence and AI-assisted investigations. For example, computers, robots and nano-technology will be more able to explore the internal systems of plants; and they may also use biological (organic plant) materials as AI components.[5] However, we do not need to wait for results. The natural cosmos is all around us, all the time.

Hybrid Intelligence

Conventional scientists and media influenced by them may have strong objections to anything that sounds like 'new age' pseudo-science or similar. However, it is worth bearing in mind that highly reputable scientists and philosophers now strongly reject the idea, prevalent in the West at least in the industrial age, that intelligent consciousness is somehow tied to and emanates from the human brain. They call this assumption *scientism* or *physicalism*, and believe it is outmoded: physicalism itself, and all that derives from it, is pseudo-scientific.

One alternative perspective is that intelligent consciousness is inherent in and fundamental to the cosmos, perhaps in the form of 'Consciousness Units', which interact with quantum waves and then particles, eventually manifesting a perceptible cosmos. (Of course, the words 'Unit' and 'Interact' are only taken as metaphors or hints, the process would be indescribable.) This image suggests that the term 'hybrid intelligence' should also convey the sense that, *while its manifestations may be hybrids, intelligence itself is fundamental and unitary*. Human consciousness is an unimaginably tiny component of a highly integrated intelligent responsive cosmos that does not exclude plants, animals, rivers, mountains, stars, and galaxies; and certainly does not prioritise one species over others.[6]

Recent decades have seen many human tragedies unfolding. Alongside, there has been the tragedy of the loss of biodiversity, leading to the designation 'age of extinction'. We all know that humans have been very busy and successful, especially since the discovery of petroleum, in trashing forests, rivers, oceans, and even the atmosphere and beyond.

Among all the losses that this entails, one is the loss of communication, or communion, with realities greater than our species. Considering the digital age, in many respects, digital technology has increased the pace of this destruction, without fundamentally challenging it. Perhaps, the essential functioning mode of conventional computer transistors—on or off—is a good metaphor for black and white thinking, even of a species that sees intelligence in itself and nowhere else.

However, there are positive signs that the digital age itself is passing: for example, contemporary developments using qubits in microscopy and astronomy might make for a more flexible worldview among the scientific community. Quantum technology may make it easier to explore a notion of 'hybrid intelligence', once again positioning human consciousness as a derivative fraction of an intelligent and creative cosmos. In other words, to create a meaningful era—whether digital or post-digital—we need a wise cosmovision, shared and personal.

One advantage of the digital age is that we have access to some information about visions of the cosmos created by our wise ancestors: shamanic, Vedic, alchemical, and many others. Tragically, we have trashed the purity of the environments where they were nurtured, by commercialisation and pollution, so we are mostly

confined to second-hand written accounts. Still, we can at least release our consciousness beyond the horizons of physicalism and materialism.

One of the great temples of Asia is Toji in Kyoto, Japan. It is the home of a *Vajrayana* Buddhist school that originated in India, was transmitted to China, and thence taken to Japan by the monk Kukai in the 9th century of the common era; since then it has become the *Shingon* (mantra) school, now a powerful element in Japanese Buddhism.[7] The visitor to Toji is advised to visit first the Main Hall, in which are enshrined the Medicine Buddha, *Bhaisajyaguru*; the solar and lunar deities *Suryaprabha*, Radiant Sun and *Candraprabha*, Radiant Moon; and twelve protector *yaksha*s, Heavenly Generals. Next, to visit the Lecture Hall, which is not as one might suppose, a hall for seniors to lecture young monks or laypeople. Rather, it houses a three-dimensional mandala of *Buddha*s, *Bodhisattva*s, *Vidyaraja*s, and *Dharmapala*s: the Buddhist tantric cosmos in full manifestation.

The mandala itself is the teaching. And why pray in the hall of the Medicine Buddha? I was told that first, it is most important to heal oneself. If not, one simply carries one's own physical and emotional ailments into the presence of the doctrine; one receives the teaching through the blurred lenses of self-pity. Self-healing is the starting point, the path to Self-knowledge.

Bhaisajyaguru is usually depicted holding a bowl of medicinal nectar, *amrita*. That means, all suffering has a remedy. Fortunately, many visions of the cosmos provide us with remedies, metaphysical and physical. For example, Tibetans tell us of a great medicinal tree with eight roots and a thousand branches that grow on the highest slopes of Mount Meru. Its leaves and roots hold sure remedies for all ills, starting with our ailments in the subtle and causal bodies. Equally the Taoist tradition in China is inseparable from the use of elixirs, both herbal preparations and internal alchemy. Plants, rivers, mountains, and stars may also be living healers, as well as the kind doctors and nurses we meet in our hospitals. If we can start by making a sincere pilgrimage to healing powers like these, we can confidently face this digital age and whatever follows it.

I would like to thank any reader who has had the patience to read through this long article. After I wrote it, I realised the whole argument is far better made in just two words, beloved of Sri Ramana Maharshi: *Arunachala Shiva*. PB

Notes and References

1. I discuss these issues in 'Artificial Intelligence and Human Security', *Inclusive Innovation for Sustainable Development*, eds. Agola and Hunter, (UK: Palgrave Macmillan, 2016), 219–39.
2. Well documented in Nandhitha Krishna and M Amirthalingam, *Sacred Plants of India* (New Delhi: Penguin India, 2009).
3. *Rig Veda*, trans. Ralph T H Griffith [1896], at sacred-texts.com. Hymn 48, verses 3 to 5.
4. We might remember that the rigid distinction between 'animal, vegetable and mineral' is a construct of the modern Western mind popularising the work of 18th century biologist Linnaeus. It is not 'scientific' even in a conventional sense.
5. Contemporary philosophers such as Michael Marder, working with botanical specialists, have also begun to explore to what extent we can identify plant thinking, intelligence, and communication. See M Marder, *Plant-Thinking: A Philosophy of Vegetal Life* (New York: Columbia University Press, 2013).
6. Two recent collections for an overview of contemporary work in this area are: *Beyond Physicalism: Toward Reconciliation of Science and Spirituality*, eds. Edward F Kelly, Adam Crabtree, and Paul Marshall (Lanham, Maryland, US: Rowman and Littlefield, 2015); *Consciousness Unbound: Liberating Mind from the Tyranny of Materialism*, eds. Edward Kelly and Paul Marshall (Lanham, US: Rowman and Littlefield, 2021).
7. Interestingly, this particular tradition died out in its homeland, India; and also in China. Its genius found root in a distant land.

Enriching Life through Holy Trio in the Digital World

Dr T G K Murthy

The Digital World is Tantalising and Beguiling

Nature has endowed humans with five (transmitting-receiving) senses and the mind to lead an internally and externally well connected, balanced, and harmonious life. If these need to be engaged in a balanced and controlled way, life may be tough in the beginning, but the end will be like *nectar*. On the other hand, uncontrolled, over-indulgence of the senses may be absorbing and nectar-like in the beginning but the end is bound to be a lunatic life. It is interesting to see that nature has chosen an optimised analogue transmitting-receiving phenomenon (touch, hear, talk, see, taste, and so on) for inter and intra connectivity. With the advent of metamorphosising technological developments, especially in information gathering, storage, and distribution through digital systems and online platforms, a new world order has set in.

Analogue systems are more or less extinguished and digital has taken over. This gave humans many tools in leading an incredibly fast life. Digital technologies encompass all human endeavours, including deep space to deep-sea activities. A mobile phone which was thought of as a status symbol a few years ago has become an integral part of society today. Space-borne real-time, online and offline digital Geo-information and communication systems have opened a plethora of applications in diverse disciplines, thereby leading to new professional opportunities. In addition, the internet has become a fulcrum for digital entertainment.

In fact, the internet is now a universal Guru. It is almost everyone's experience that when a

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child is told about some subject matter, the child immediately used to say 'No, it is not correct because the teacher said so and so'. Now, the present-day children say to the teacher directly, that they are wrong because the internet guru says something different. What about elders and professionals? The scenario is not much different. These groups of people are rushing to the internet to find quick fixes, instead of mining their own minds for creative concepts. It reminds us of a story narrated by Sri Ramakrishna. The gist of the story is this: two friends meet on the road and one says to the second that he has seen so and so on his way. But the second friend refuses to accept this, saying that such a thing is not reported in the newspaper. Today's newspaper is news streaming online. In the present scenario of the digital world, a sea change is being felt in humans, irrespective of age and gender, at individual, family, national, and global levels, often with disastrous consequences.

Cyber-psychology is emerging. Now even the five senses are not adequate to absorb or engage the amount of online data flow. This resulting digital world has become more like a forest where a variety of ecosystems coexist to give us a fruitful and purposeful journey. But, if one enters into this forest without proper understanding, it may appear as amazing; but by the evening, when one is trying to find a way of exit, one will lose track and as a consequence, land up in confusion and chaos. It is like a bee anchored to a bewitching flower, that loses itself in the nectar of sweetness and gets self-trapped leading to annihilation.

Sri Shankaracharya had said a few centuries ago in *Vivekachudamani*: '*Śabdajālam mahāraṇyam-chitta bhramaṇa kāraṇam*; the web of words is like a dense forest which merely causes the mind to wander'.[1] In the present-day digital age, it is the dense forest of digital media that is causing fear and anxiety. Due to this, millions of people all over the globe are tossing in their beds, sleepless every night, leading to self-inflicted misery not only to themselves but also to others. They are chasing a wild goose of finding solutions to everything in a digital shop. Humans are getting disconnected from themselves and from their surroundings. A deeper insight into this shows that it is not the technology by itself that is the problem, but the *process of adoption* and the *associated addiction*. The object of addiction can be different in different situations, and for these, one or more senses are engaged. But in the digital world, invariably all the five senses along with the mind are hooked, more or less abreast.

Sri Ramakrishna, Sri Sarada Devi, and Swami Vivekananda are the Holy Trio, who incarnated to enrich the lives of millions of people all over the globe through their lives and teachings. As a result, the illusions of mirages, for many, have been replaced with the cherishment of an oasis. In the digital world, the very recalling and contemplating life and teachings of the Holy Trio itself can be transformational. In order to illustrate this, some incidents are recaptured from their lives.

The Path of Dis-identification

Sri Ramakrishna, the incarnation of this age, is incomprehensible to the ordinary human mind. With his arrival along with Holy Mother and his group of chosen disciples, a new chapter in human history commenced. For the scientific age, he demonstrated through his spiritual practice and realisation that the truth is one and everyone has one's unique way of realising it. Sri Ramakrishna's practical Vedanta that every *Jiva* or the individual soul is a personification of Shiva or God, though with a degree of difference in Divine manifestation, gave a new hope to

humanity that taking human birth has a meaning and goal. Due to this, millions of people found solace in their lives, anchoring themselves to the goal of manifesting divinity within. Sri Ramakrishna struck a chord with all cross-sections of people, including those who believed that they don't have hope of getting out of their self-crafted spider web of life. Like a father, he carried millions of his wayward children on his shoulders to the safety of emancipation.

Mahendranath Gupta was pious natured, well-educated, and was well-positioned as an illustrious teacher. But due to the trials and tribulations of life circumstances, he was under severe family stress, and was even contemplating taking his life. Due to divine providence, he came under the fold of Sri Ramakrishna who transformed his life. Mahendranath Gupta then became a foremost house-holder disciple of the Master and until today, he is crowned as a jewel for his brilliance as an author of the Hagiography of Sri Ramakrishna called *Sri Sri Ramakrishna Kathamrita* (*The Gospel of Sri Ramakrishna* in English).

The life of Girish Chandra Ghosh is comparable to the Himalayan mountains with many of its hills and dales. His life swung between extremities of pleasures and pains. His multifaceted talents as an artist, on and off the stage, are unique. From this angle, he can be viewed as an investigative, innovative, and invigorating explorer in the forest of art. His life is a story of a person transformed from frustration to fascination, in the hands of Sri Ramakrishna. Swami Chetanananda writes:

> Girsh Chandra Ghosh is just such an example of the transforming power of Sri Ramakrishna. Before he met Sri Ramakrishna, Girish Ghosh led a reckless, hedonistic life. He was a self-proclaimed libertine and a rebel against God. Yet he had a strong mind, and was a man of tremendous heart. The turn that Sri Ramakrishna gave to Girish's life is epitomized in a conversation that took place between them on December 14, 1884:

Girish Chandra Ghosh (1844–1912)

> Master: 'Have faith in the Divine Mother and you will attain everything.'
>
> Girish: 'But I am a sinner.'
>
> Master: 'The wretch who constantly harps on sin becomes a sinner.'
>
> Girish: 'Sir, the very ground where I used to sit would become unholy.'
>
> Master: 'How can you say that? Suppose a light is brought into a room that has been dark a thousand years; does it illumine the room little by little, or all in a flash?'
>
> A little later Girish asked, 'Tell me what I should do.'
>
> Master: 'Give God your power of attorney. Let him do whatever he likes.'[2]

Girish heaved a sigh of relief and said to himself: 'Ah, now I am saved. Now I shall be free like air, as power of attorney is given and God himself will take care.' He was unaware of the trap he got in by the Master. One day Girish said in a trifling manner, 'Yes, I will do this'. 'No, no', corrected the Master, 'you must not speak in that dogmatic way. Suppose you will fail to do it. Say, God willing, I shall do it.' Girish understood that he had given up his freedom and made of himself the Master's captive.

Thenceforth, Girish tried to give up his idea of personal responsibility to become a willing instrument of the Divine will. This was a total transformation. This seed of giving power of attorney has such a potency that it broke all barriers of resistance from Girsh Ghosh and finally evolved to become a big banyan tree of faith and surrender to Sri Ramakrishna.

> On January 1, 1886, Sri Ramakrishna felt strong enough to take a walk in the garden. It was a holiday, and many devotees had come from Calcutta to visit the Master that afternoon. He began walking slowly through the garden, and the devotees followed him. Suddenly, Sri Ramakrishna said to Girish, 'well Girish, what have you found in that you proclaim me before all as an Incarnation?' Falling to his knees before the Master and saluting him with folded hands, Girish responded with great emotion: 'Who am I to speak of him? Even the sages Vyasa and Valmiki could find no words to measure his glory!'[3]

With this, his real-life drama unfolded and today, Girish Ghosh has etched a mark in human history.

Equally was the illuminating episode of Kalipada, another person who had lost his way in life, and was saved by the Master. Sri Ramakrishna's love for humanity cannot be put into words, but can only be experienced. Millions of people were uplifted from their worldly slumber and despondency by his grace. Sri Ramakrishna's life is one of discernment and truth-seeking rather than accumulation of information. In the present digital information age, he is the source of inspiration for those who have drowned themselves in social platforms to wash off the dross.

The Path of Conviction, 'I Have A Mother'

Mother knows how to cajole a restless child. Sri Sarada Devi, popularly known as Holy Mother, is the first disciple of Sri Ramakrishna but was formally worshipped by him as goddess *Tripurasundari*. Swami Vivekananda wrote to Swami Shivananda, one of his brother disciples, from America in 1894: 'Without Shakti, there is no regeneration for the world. ... Mother has been born to revive that wonderful Shakti in India; and making her the nucleus, once more will Gargis and Matreyis be born into this world.'[4] He further said: 'Brother! I shall show how to worship the living Durga. ... When I am reminded of the Mother, I ejaculate, "What after all is Rama?" Brother, that is where my fanaticism lies. ... fie on him who has no devotion for the Mother!'[5] Swamiji with his extraordinary vision could see the Mother's divinity. It is also everyone's experience that whosoever came to her fold could feel the uniqueness and warmth of the Mother. This is the reason why Swami Saradananda, another spiritual giant with an extraordinary mind, says: 'I salute Sarada Devi, the embodiment of all knowledge, who exists in Sri Ramakrishna as the burning power of fire.'[6]

Sri Ramakrishna, to a certain extent extended his grace to seekers conditionally; but Holy Mother was so compassionate that she gave her blessing to one and all unconditionally saying: 'I am the Mother of the wicked, as I am the Mother of the virtuous. Never fear. Whenever you are in distress just say to yourself, "I have a Mother".'[7] This benevolent assurance became a

universal mantra. Many a wayward, fallen, and those who had lost their way in their lives found solace at the feet of Holy Mother and recouped. Innumerable are such incidents recorded in *The Gospel of Holy Mother*. The Holy Mother has demonstrated an extraordinary quality of detachment in her life. She was attached to Radhu, her orphaned niece, throughout her life, maybe to shield her own real nature. But towards the end of her earthly life, she deliberately detached herself from Radhu. This detachment is a great quality she is conveying to everyone who has got entangled with the digital world.

Holy Mother was withdrawing from the world during her last days. A few days before the inevitable end, an old devotee named 'Mother of Annapurna' called into her room. When the lady expressed her fears about the future, the Holy Mother remarked: 'Why do you fear? You have seen the Master. But I tell you one thing—if you want peace of mind, do not find faults with others. Rather see your own faults. Learn to make the whole world your own. No one is a stranger. The whole world is your own.'[8] Finding any fault in the digital world may not auger well for our own benefit, but rather we should find our own fault of anchoring to the internet unhindered. This is a strong message from Holy Mother. For those who are struggling to achieve detachment in digital life, her example is uplifting.

The Path of Self-Reliance

The very look at any of the portraits of Swami Vivekananda gives us enormous self-confidence. Swamiji wanted scientific progress abreast with spiritual growth. His inspiration to Jamsetji Tata led to the establishment of a premier scientific institution: the Indian Institute of Science in Bengaluru. His vision was that *self-confidence*, *self-reliance*, and *self-control* should be the driving forces at the individual and societal levels for a

nation to be strong. He exhorted that one should question everything rationally before accepting and implementing, but not at the expense of spiritual advancement. His thrust on the engineering of the mind for *concentration* and *control* on any subject is famously known. The *Complete Works of Swami Vivekananda* are amazing in the sense that there is no subject that he has not dealt with an authority. This can be found in his lectures delivered at various places across the globe, delivered as a result of deep knowledge, concentration, and faith.

This methodology brings innovation, leading to a self-confident, self-reliant, and self-propelling society. In this context, if we observe the present-day educational or professional institutions tuned to the digital world, it is appalling to see how we are drifting away from generating a creative knowledge society. This can be clearly seen from an example. A group of students from all cross-sections went to premier national institutions of research to equip themselves with technological advancements. Towards the end of the year, a

written examination was conducted to select a few candidates to provide them with an opportunity to work with the scientists of repute. In the survey, it was found that in one group of students, the answers were on the same lines; whereas, in the other group, the answers were divergent and often unique. This pattern was noticed conspicuously on multiple occasions. After a thorough enquiry, it was found that the first group had access to the internet and so the answers were the same; but the second group, lacked internet access and as a result, churned their minds to pull out the original solutions. It indirectly speaks of the impact of the digital world at even the foundational level. This is how nowadays, the students are losing their power of innovation.

As already pointed out, the situation in the professional field is discouraging and alarming. It is unfortunate that uploading the relevant material on the internet has become so easy that facts are being distorted. This is in contradiction to Swamiji's vision of being *scientifically spiritual* and having a *spiritually oriented scientific* society. Such a vision is the basis for the self-reliant nation, and as such, there is a dire scope for relooking at the digital world. Swamiji says:

> We never preached our thoughts with fire and sword. If there is one word in the English language to represent the gift of India to the world, if there is one word in the English language to express the effect which the literature of India produces upon mankind, it is this one word, 'fascination'. It is the opposite of anything that takes you suddenly; it throws on you, as it were, a charm imperceptibly. To many, Indian thought, Indian manners; Indian customs, Indian philosophy, Indian literature are repulsive at the first sight; but let them persevere, let them read, let them become familiar with the great principles underlying these ideas, and it is ninety-nine to one that the charm will come over them, and fascination will be the result. *Slow and silent, as the gentle dew that falls in the morning, unseen and unheard yet producing a most tremendous result, has been the work of the calm, patient, all-suffering spiritual race upon the world of thought*.[9]

The literature depicting the lives and sayings of the Holy Trio, in essence, is a most fascinating experience. Why so? Romain Rolland, a Nobel laureate says:

> I am bringing to Europe, as yet unaware of it, the fruit of a new autumn, a new message of the Soul, the symphony of India, bearing the name of Ramakrishna. It can be shown (and we shall not fail to point out) that this symphony, like those of our classical masters, is built up of a hundred different musical elements emanating from the past. The man whose image I here evoke was the consummation of two thousand years of the spiritual life of three hundred million people.[10]

Swami Vivekananda's exhortation of integrating that '*fascination*' in the modern digital world has become all the more relevant today than at any other point of time.

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Life in the Digital Age

Dr R G Nadadur

When we speak of the digital age, the first question to be asked and answered is what is meant by that. Most of us today are constantly interacting with digital technologies. These technologies are used by all of us. They may take several forms. They may be mobile handsets, smartphones, computers, laptops, microwave ovens, washing machines, cooking ranges, television sets, home theatre consoles, and so on. There are several other products that we handle. These could be home appliances or home security systems or home games or automobiles. In fact, digital technologies and devices may affect our lives in more ways than we are aware of.

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The extent of the use of digital technologies and devices today is very revealing. Some studies have come up with the bizarre fact that more devices are connected to the internet than there are human beings on earth. This is difficult to believe. However, when we think about it, we realise that most human beings have more than one device that they use regularly. One study has revealed that while around 25 billion devices were connected to the internet in 2017, the number is expected to cross 100 billion by 2030. This is really mind-boggling.

The digital age refers to the use of machines and computers for various activities of human beings. The digital age has an overall impact on our societies and day-to-day activities. It has a lot of advantages and disadvantages—many opportunities as well as costs. We are living in an age in which professionals in digital technologies are trying to push their boundaries, becoming more advanced

in technology even beyond our imagination. The digital age has given a new explanation to technology which is now used as a mode of expression, interaction, entertainment, learning, and so on.

Hardly few of us knew that there will be a stage in life where digital devices will be the most important part of human beings. Smartphones, notepads, laptops, and so on have become a part of our life. But the most important question here is: *Whether we can survive without these devices in our possession*? Definitely, the answer will be 'no', for most of us are fully dependent on these devices in our daily life.

Use and Misuse of Digital Technologies

We are living in the digital age and these devices have changed completely the way human beings have lived before, due to the simplicity of communication using digital devices—sending or receiving text messages, pictures, voice, music, videos, and many other functions that the digital devices provide. These devices have even enabled us to perform multiple tasks as soon as we hold them in our hands—we can read a message, listen to music while talking to someone or checking Facebook accounts and the like. Humans may not perform multitasking accurately like computers do, as we lack the ability to monitor various tasks at the same time, but we can give individual attention to each task.

One of the most essential aspects of these digital devices is their high storage capacity or memory, and the stored data can be efficiently retrieved with speed and accuracy. We use digital memory for storing critical files, important business documents, pictures, and the like, not only due to its faithfulness but also the ability to maintain the stored information for a very long time—as long as we keep them in our machines and nobody can access them without our permission. Professionals in the memory engineering have managed to make our lives easier by creating and improving the digital memory that we use. Instead of saving information in our brains or papers, we just save them in our digital devices and carry the saved information with us wherever we go. We do not even worry about them once they are stored.

Digital technologies and devices have invaded every aspect of our social lives. In the past, most of our social interactions were private and undocumented. That is increasingly not the case with the advent of the digital age. When we interact with each other through the internet, we leave digital records behind. Companies like Facebook and Twitter have huge databases full of all kinds of information about our social behaviour.

In the olden days, there were no online messengers, no emails, and no cell phones. Indeed, cellular technology made it possible for us to communicate over wireless media. Web communication facilities have worked wonders in speeding long-distance communication. Today we can reach and keep in touch with our family and friends with the help of social networks like Facebook, Twitter, Skype, Whatsapp, Messenger, and the like. Sadly, overuse of these means of communication has deprived mankind of the warmth of personal contact. Emails replaced handwritten letters and communication seems to have lost its personal touch.

Also, the internet has bred unethical practices like hacking, spamming, and so on. Internet crime is on the rise. Another sad development is that today's children are spending a lot of time playing online and less or almost no time in the playground. Youngsters are spending too much time on virtual social networks and are missing out on the joys of real social life.

The digital age has helped a lot in economic activities. A new version of the industrial revolution is one of the impacts of the digital age in the

economic life of societies today. The use of new technologies and inventions of machines help us towards increasing the production of goods and services, and to deliver those goods to the appropriate place when needed. Also, without the world wide web, globalisation and outsourcing would not be as feasible as they are today.

The digital revolution has radically changed the way individuals and companies interact. Small regional companies were suddenly given access to much larger markets. Concepts such as on-demand services, manufacturing, and rapidly dropping technology costs have resulted in possible innovations in all aspects of the industry and everyday life.

Digital technology enables us to go online, search for one of our leaders, and have a mutual conversation with him or her about the political problems that rise all the time like the issue of corruption among the leaders, misuse of public funds and so on. Also, we can find out the best way to tackle these problems. People can now get facilities and benefits that were previously not available to common people.

As a whole, our society has evolved. Our technological advancements have brought the whole world at our fingertips. The internet certainly has given us all kinds of opportunities and access to an abundant amount of information. Our phones and laptops help us stay connected. Most of us find that the mobile phone is an essential part of our life. A whole lot of our data is saved online. Our entire world revolves around technology.

Digital technologies have completely changed the way we live. We can do everything online, from grocery shopping to home entertainment. It is certainly convenient, but it has some drawbacks. The websites that we visit are constantly monitoring our online activities. The companies know what we are looking for—the places we visit, the items that we buy and so on.

Our Personal Data on the Internet

Our online personal data is regularly accessed and utilised by various agencies with or without our knowledge. With this collected data, companies are able to use algorithms to help gear things towards us. They include recommended items to buy on Amazon and other e-commerce websites, places to visit, programmes to see on Netflix, and advertisements we may be interested in and so on. This form of surveillance is present in our life. Our personal data, gathered by Facebook, Amazon, and the like is also shared with others.

Every time we visit a website, a large volume of cookies on our computer and the data about these sites are stored. Even allowing connecting to the internet in a public place is a strategic plan that companies have created to gather data from us. So, companies are keeping us under surveillance, but we agree to this action on their part in order to keep using these sites.

Some questions arise: Is it bad for companies that make people agree to have their data collected? Or is it bad for us to knowingly give them the go-ahead to stay connected? Another point to note is that companies are not the only ones watching when we are online. Various government agencies also do so in their intelligence-gathering work.

Living in a digital world has made it easier for us to stay connected. We are able to stay up to date with everyone around us. Social media helps us share a family picture online or watch a friend's concert video. Sometimes, it is a little hard to get away from this social pressure to show people what we are doing. It is easy to forget to live in the moment when we are busy trying to capture these moments in a photo or a video.

This pressure to keep others updated and to show people snapshots of our lives keep us tethered to our devices. The phone stays with us because within it lies our life's story. By taking more

pictures, we have started keeping more memories with us. In our hands, we hold technology that captures everything—sound, colour, lights, people, or places. We want to share every new moment we capture with others online. Technology has allowed us to stay connected, but there is a cost to be paid.

It is very clear that digital technologies and devices are firmly a part of our lives. These technologies have serious implications for us. They are positive when they enable us to manage our life more efficiently, but the way in which smart technologies are used in the home can also lead to some unhappy side effects.

Digital Marketing and Advertising

As a result of the global population becoming much more digitally connected, many firms have adjusted their marketing strategies to maximise their consumer engagement. In the past, companies had to rely on traditional media outlets such as radio and print to attract customers and build a reputation for themselves. They can now use the digital world to achieve this instantly. Digital content is seen by significantly more people than traditional media, in a much shorter period, especially when combined with the use of programmatic advertising, which is misused by some to exploit their customers.

Programmatic advertising utilises data to develop algorithms and automate the buying, placement, and optimisation of advertising. These technologies help a firm to target the intended audience much more effectively than ever before. A significant positive consequence of this level of personalisation is convenience. However, individuals must allow access to their data, either through cookies, search history, or through forms of surveillance via smart speakers and other connected devices. It is no surprise, therefore, that many people find this targeted advertising intrusive, and sometimes overbearing.

Artificial Intelligence and Human Capital

Modern technologies are transforming every aspect of our lives into digital ones. In some workplaces, people are made redundant as Artificial Intelligence (AI) is replacing human capital. There is no doubt that the way AI speeds up the tasks and makes our workplace more efficient is advantageous from the business point of view, but the mass unemployment that could arise as a result of the replacement of human beings at work is certainly controversial.

However, some people insist that the use of AI does not necessarily remove the requirement for real people but simply allows workers to utilise their expertise in a different way. In the case of some medical apps, for instance, digital technology enables medical staff to access their patients' health data remotely in real-time. This means that the doctors can do their jobs of diagnosing disease and assessing the outcome of treatments much more effectively than they could have done previously. These kinds of technological developments could have a positive effect on life in the digital world.

The replacement of humans with technology is viewed with scepticism when there is evidence that AI can outperform human beings like doctors. However, the problem is that patients would not trust AI. At another level, people are worried about firms using their data to exploit purchasing patterns. With AI and other digital technologies playing such a large part in our lives, it may be necessary to have a code of ethics to govern their use.

Relevance of Vedanta in Digital Age

In the context of India, I would like to touch upon the relevance of Vedanta in the present day. Many of us think that digital technologies are a product of the West and would like to believe in the divergence of Eastern and

Western philosophies. However, a deep study of the ancient thought of Vedanta would bring out certain facts and help us find a balance in the digital age. Thanks to our growing familiarity with computing, Virtual Reality (VR) and AI, the so-called modern societies are now better placed than ever to grasp the insights of Vedanta thought.

Vedanta summarises the metaphysics of the Upanishads, which form the basis for the many philosophical and spiritual traditions of India. The Upanishads were also a source of inspiration for some scientists, including Albert Einstein, Robert Oppenheimer, Erwin Schrödinger, and Werner Heisenberg, as they tried to comprehend complex principles in science.

It may be relevant to learn some lessons from the Bhagavadgita, which contains the essential teachings of the Upanishads. Bhagavan Sri Krishna, while imparting knowledge to Arjuna, inter alia, said that it is better to fulfil one's own duties, even if imperfectly, than to try to live an imitation of someone else's life with perfection. The Lord also pointed out that what we are at present is the result of what we have thought in the past. We are made of our thoughts; we are moulded by our thoughts. There are several other lessons from the Gita that are relevant to us in the digital age. These lessons should guide us in the use of digital technologies and devices. Their use, leading to happiness for some, should never be at the expense of the well-being of others.

In conclusion, I believe that we cannot do without digital technologies and devices in today's world. However, we must also realise that the concepts from the Vedanta such as selfless service and sacrifice for the welfare of all living beings are very much relevant even now. *Perhaps, we need them more today than we ever did.*

The present-day world is passing through great turmoil, tension, and transition. We find ourselves precariously poised between a disappearing past and an uncertain future. It is a time to imbibe the universal truths from Vedanta and find out ways for developing courage, compassion, and wisdom to deal boldly with the problems we face today. The digital age must not lead to a complete erosion of our moral fabric.

Vedanta will throw light on how to lead a life that is based on values and morals in the digital age.

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Impact of Artificial Intelligence on the Practice of Dharma

Rajiv Malhotra

Artificial intelligence (AI) is the disruptive technology for what is being called the Fourth Industrial Revolution, and it is fashionable to portray it as a sort of Holy Grail. However, one must balance such utopian views with the serious challenges that the new technology brings in its wake. The purpose of this article is to point out issues that are not receiving the level of attention and debate they deserve.

Algorithmic Biases

To begin with, the public often assumes that the algorithms which AI uses are fair and neutral. But this is far from the truth. Algorithms are developed on huge amounts of big data, and in the process of training them, biases that have inherently been a part of current paradigms get woven into the training. The worldview of any tradition is subjective, and this permeates all the disciplines that are based on it. AI has at its base Western universalism in all its forms—scientific, sociological, political, and economic models—by which I mean the assumption that the experiences of Western history comprise the gold standard for everyone and constitute the 'normal'. As a result, AI has not been neutral to non-Western worldviews, especially those which have independent, parallel systems of thought.

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What makes Hindu dharma especially vulnerable to algorithmic biases is that it has suffered the impact of a thousand years of colonisation, and this deserves a detailed treatment. A good analogy is with the biases in the training of a child. A child is moulded through influences from parents, teachers, school systems, the media around it, and the readings which are a part of its growth. What the child is taught as true or false includes many subjective beliefs that shape its worldviews. Likewise, in the case of artificial intelligence, the data used to train is especially important in shaping what the algorithm considers as right and wrong, and what it strives to optimise as a worthy outcome. For example, African Americans have complained that there is a bias against them in many AI systems that were trained with Whites considered normal and Blacks as something of an aberration from the norm. Similarly, feminists and LGBTQIA people have complained that their members are considered inferior to males and straight people respectively, because the datasets used for training algorithms have been dominated by people of certain types and excluded others.

I am unaware of any training of algorithms using texts and interpretations that are from the Hindu dharma traditions. Wikipedia is a common dataset for training algorithms because it is assumed to be the result of a democratic process in which all members of the public participate equally. But this is simply not true. Wikipedia's editors have a hierarchy of privileges, and many

of its entries concerning Hindu dharma are outright biased because they rely on Western Indology from the colonial era. When a machine is trained using Wikipedia as a primary dataset, it contains the same biases as Wikipedia.

A large number of Indian texts, because of the colonial past, were translated and interpreted under the supervision of rulers who were outside the Hindu tradition. Initially, the influence of Muslims was felt in the public discourse in India. But the foreign influence was much heavier when European colonisers (who called themselves Orientalists), started the systematic interpretation of Sanskrit texts, partly because they assumed Sanskrit was the heritage of European languages and created by the so-called Aryans. Therefore, from the late 1700s and throughout the 1800s, the study of Sanskrit and its seminal texts became a thriving academic discipline across Europe. Almost all present-day works on Hindu texts in English are based on frameworks established by scholars who were not practitioners of the tradition but outsiders. The corpus of Western Indological works today contains interpretations unacceptable to most experts from within the Hindu tradition. Thus, whether you use Wikipedia or any Indological work for training an algorithm, the result can be biased. This can range from outright nonsensical and blatant falsehoods to more subtle and nuanced prejudices.

A good example of such academically generated biases would be the interpretation of the Sanskrit word *swastika*. It refers to auspiciousness, good luck, positive wishes especially for a new beginning, and has nothing to do with the horrible interpretation given by the Nazis. But when an algorithm is trained using Western writings, *swastika* becomes associated with violence and fascism. Posts containing the word or image of *swastika* often get banned. However, if such an algorithm was trained in India, it would learn that the *swastika* is publicly displayed on shops, trucks, billboards, and used as a brand on products from matchboxes to other consumer goods.

Related to the word *swastika* is the word *Aryan*. It too has been misinterpreted by Western Indology. *There are no Aryan people as a race*. In fact, there is no such word in Sanskrit. The correct Sanskrit word is *arya*, without the 'n'. *Arya* is an adjective for nobility, and describes people who are courageous, possess good character and have high standards. The fabricated Aryan invasion theory eventually culminated in Nazi scholarship. The problem of Aryan seen as racism has entered AI because algorithms are trained on texts based on the Aryan invasion theory. This bias continues to exacerbate the Aryan/Dravidian divisiveness as the racial substratum of Indian society.

Perhaps the most misunderstood concept of the dharma traditions that has entered the modern lexicon is the word *caste*. But this is not a Sanskrit word at all. The term *casta* is a Portuguese word that represents class or race and became the framework used by the Portuguese to classify Indian society. The closest Sanskrit term is *jāti* which means community, and the term *varṇa* which means occupation. The predominant scholarship on caste was earlier written by British scholars and has since India's independence been taken over by their Indian followers. Therefore, AI systems trained on prevailing literature tend to pick up the notion that caste bias is inherently built into Hindu dharma.

In a similar manner, literally hundreds of other Sanskrit words have been misinterpreted. This is why I wrote a book called *Sanskrit Non Translatables*, with the purpose of explaining that certain Sanskrit words cannot be replaced because of the bias inherent in their translation into English. While all languages and faiths

suffer to some extent in this way, the problem is particularly acute with respect to the dharma traditions because of the colonial past.

Another cause of biases toward dharma is that dharma is not based only on one book that is historically unique, but on the human experiences of exemplars in higher states of consciousness. A benefit of this is that such a tradition does not get frozen in time and thereby boxed into the rigid walls of some historically fixated dogma. However, a serious pragmatic disadvantage is that in the absence of the 'one book' absolutism, the texts and the data-sets available for training algorithms can be selected on an ad hoc basis by whosoever controls the decision. This can turn into vulnerability because algorithms can be trained by their owners depending on the social-political preferences they wish to proliferate. AI can thus be used to create a wedge among the followers of Hindu dharma by training the AI algorithms using different texts and interpretations.

Moronization: Dumbing Down the Masses

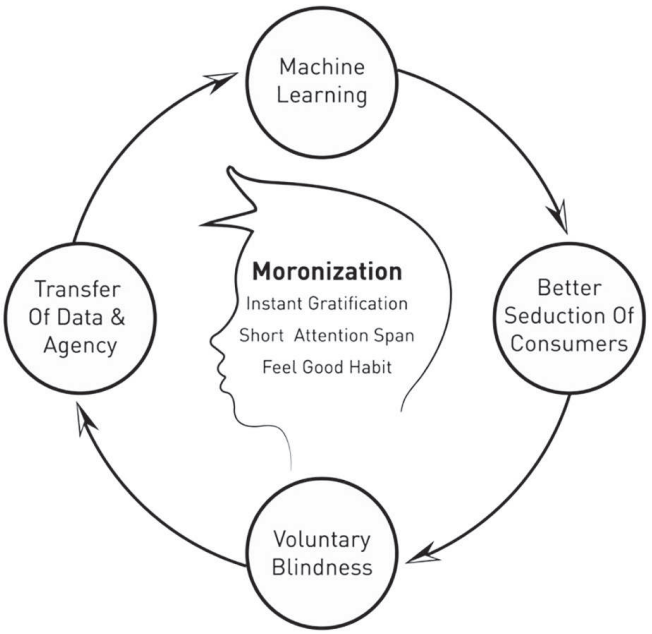
AI is at the heart of today's age of social media, where digital users can inflate their egos with instant popularity measured by the number of likes or followers, sometimes running into millions. While these activities enhance social status—indeed, some social media stars are considered a new class of celebrities and intellectuals—they also contribute to a greater dependency on, and addiction to, social media. Ultimately, such users become dependent on it for their self-esteem and psychological well-being, while surrendering their critical thinking. Knowledge is being crowd-sourced, and the relative popularity of opinions, determined by algorithms, has become the criteria for deciding what to believe. *People are less grounded in knowledge based on the rigour of studies from authoritative sources and are more likely to follow the bandwagons on social media.* Traditional texts and exemplars have been sidelined by popularity and power plays.

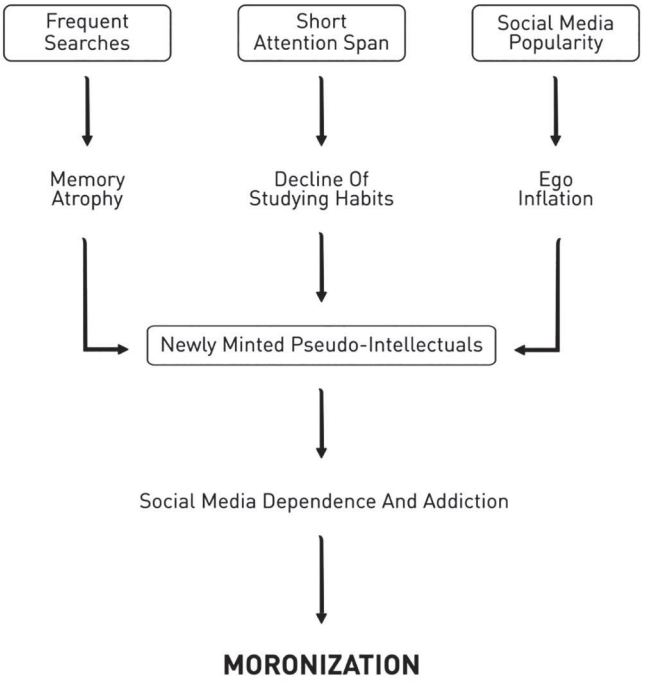
This cognitive reengineering is not a passing fad but the likely future driven by AI. Human agency is being replaced by algorithmic power over decision making and this is resulting in a breakdown of faith and other systems that traditionally defined how people see the world and make choices. I use the term 'moronization' to refer to this dumbing down of large portions of humanity. The figure from my book, *Artificial Intelligence and the Future of Power,* illustrates this (see page no. 101).

This is likely to get worse because, contrary to popular belief that human cognition is somehow sacrosanct, algorithmic modelling of emotions, psychological characteristics, and mental faculties are already delivering practical applications, and this renders humans highly susceptible to emotional seduction by digital systems. The figure in the next page shows how digital technology is dumbing down the masses. People's memories are atrophying because they constantly depend on online searches and intelligent devices for information. As memory atrophies and attention span shortens, it leads to a decline in study habits.

Profiling Dharmic Practitioners

Moronization of people has deeper, insidious consequences when one considers the impact it has on faculties core to the human spiritual experience, the very stuff yoga and other dharmic systems intensively focus and work upon. The cognitive mapping of hundreds of millions of people's emotions, likes, dislikes, preferences, and vulnerabilities is taking place in a very systematic manner. Their activities are recorded in a variety of formats including voice, text, images, handwriting, biometrics, buying habits, interpersonal communications, travel options, and entertainment preferences. Machines have become





extremely clever at not only capturing private information but also understanding the meaning and purpose of human activities with the use of Natural Language Processing.

Furthermore, by manipulating hormones, neurotransmitters, neural networks, and eventually artificial memories, machines are rigging our human physiology to produce pleasure and avoid pain. Certain kinds of private experiences are already being technologically engineered to alter individuals' emotional states.

One important active area of research is the modelling of human weakness and vulnerability. Machine learning systems score the likelihood of users being diverted from reading different kinds of things on their screen. Various kinds of cognitive stimuli are devised and tested, and the responses are recorded and stored in a database that can be accessed by AI systems and used to construct a detailed map of an individual's psychology.

Besides these predictive models for individuals, algorithms also model communities, cultures, and subcultures. This data helps develop psychological profiles that anticipate reactions and can be used to manipulate or influence groups that have their own distinctive habits or tendencies. Artificial Intelligence can determine distinct psychological and emotional templates for hundreds of groups, whether African Americans, white Americans from the US red states, Indians living in the US, students at a University in Delhi, or whatever grouping of humanity one can imagine. This modelling extends to practitioners of faiths as well, leading to the profiling of dharmic practitioners in a manner where they have no say or awareness in how they are being characterised.

Once built, these psychological profiles weaponise the social media platform into a means for manipulating any individual's private psychology. And for what purpose? For the benefit of whomever, or whatever, is in control of the

machine. The beneficiary could be the digital platform itself, such as Facebook or Google, or their commercial clients—advertisers, political candidates, or anyone else willing to pay to influence a target audience. Such models of personal psychology are always learning from the feedback and getting smarter. The more a model is used, the better it gets, just like human psychologists get better at understanding clients the longer they interact with them.

Once the modelling and profiling is done, algorithms are manipulating hormones, neurotransmitters, neural networks, and eventually artificial memories to rig our human physiology to produce pleasure and avoid pain. Certain kinds of private experiences are already being technologically engineered to alter individuals' emotional states.

Algorithmic Biology

Modern Western medical science is now discovering what the ancient philosophical system of Vedanta has always espoused, namely, *that there is no hard boundary between mind and body, and that one influences the other*. However, contrary to Vedanta's worldview, there is the opposite approach today in which the mind and physical body are being modelled as biological mechanisms using the scientific method known as reductionism. This method assumes the human to be a purely material system built of parts just like a machine. New reductionist approaches to medical treatment are emerging, which model the entire mind-body complex as a collection of discrete parts. Except for the fact that its algorithms operate on hardware made of organic material instead of silicon, biology is being understood to function just like a computer.

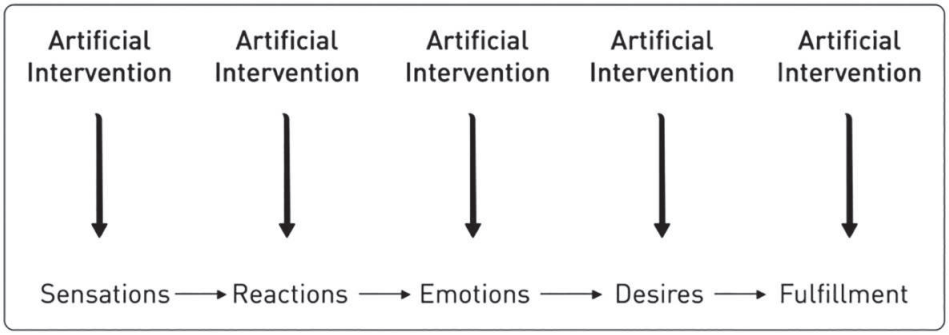
Such a reduction of the human being into biological algorithms is a modern breakthrough that makes it possible to go to the next step: transferring these human algorithms from natural biological hardware to run on silicon or some other man-made hardware. This is where AI is headed.

The underlying premise of the marriage of biology and computer science, continually reinforced by fresh discoveries and applications, is that all living beings—from the simplest single-cell organisms all the way to humans—are merely collections of algorithms. Researchers in neuroscience and other branches of medicine are studying the biological algorithms that the body has evolved over eons, and reverse engineering living systems to figure out behavioural models with increasing levels of sophistication.

Many technologists and futurists view living organisms as mere algorithms in which concepts like free will are meaningless. They model a human as a bag of meat driven solely by biochemical and electronic processes that we recognise as sensations, emotions, thoughts, and even selfhood. Artificial Intelligence and neuroscience collaborate to produce interventions at various levels of our cognitive apparatus (see the figure on page 103); in effect, creating the means to hijack all the natural mechanisms that produce our emotions and thus drive our behaviour.

Assault on Spirituality: Battle for the Self

Reductionism is an analytical method that breaks down a system into smaller parts and subsystems for deeper examination. As the reductionistic models move further from the holistic sense of a unified selfhood, systems are, simply speaking, considered nothing more than the sum of their parts. Algorithms too can be broken down into smaller algorithms, which consist of even smaller algorithms. But in the end, *an algorithm has no self*. The notion of an algorithm having a self is meaningless in the reductionist approach.

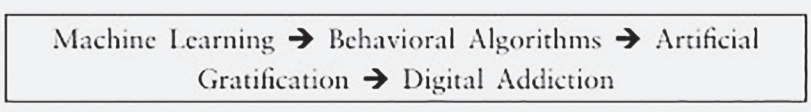


A similar process takes place in the practice of Vedanta, where the individual self (often referred to as the ego) is deconstructed as a false sense of unity. In the perspective of ultimate existence, no ego actually exists. However, Vedanta and scientific reductionism differ in one critical aspect: the deconstruction of parts leads in opposite directions.

A computer algorithm is fully capable of modelling any physical process because a process is merely a mechanism consisting of parts that comprise subparts ad infinitum. A system is fully characterised by the algorithms that describe its functionality. Consequently, there is no such thing as the indivisible self of a computer system. Computer systems have no need for a self, and in fact, it is impossible for a computer to accommodate the notion of the self as an autonomous being. The question, 'who performs the algorithm?' is meaningless and irrelevant to the computer scientist. There is no 'who-ness' in a material process.

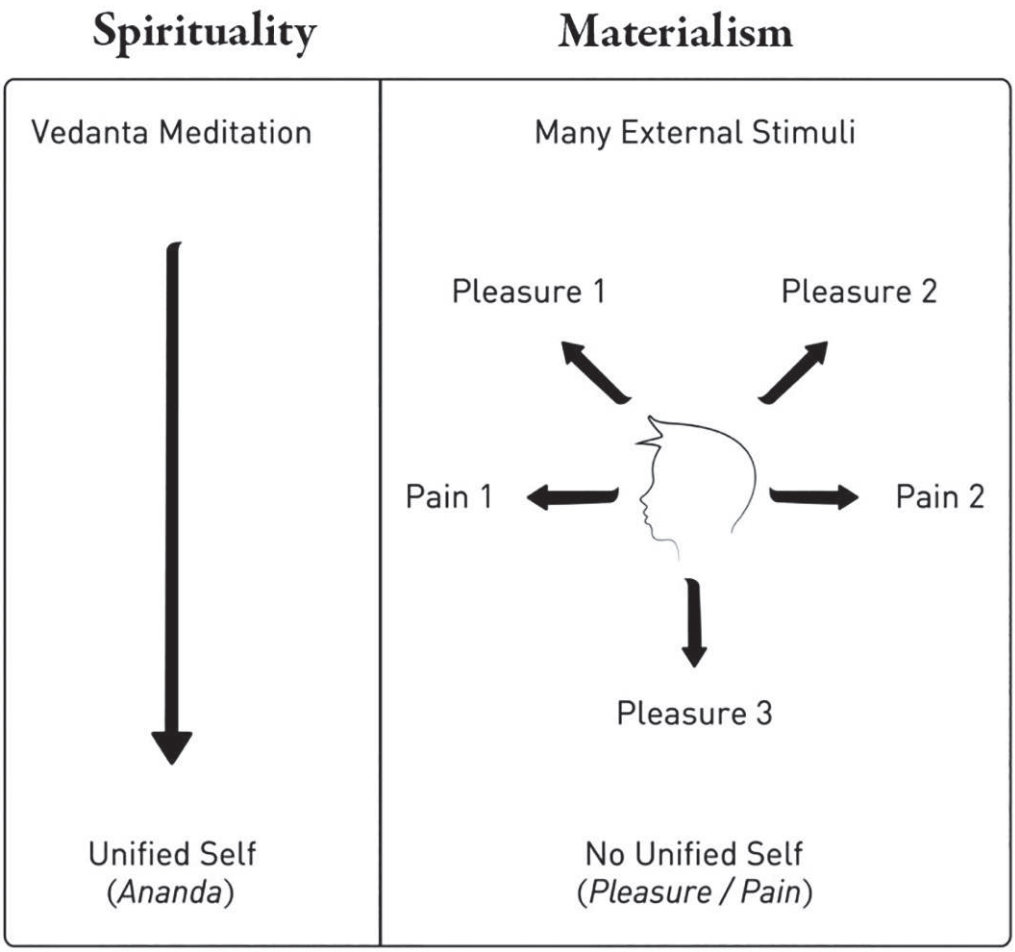
At the pragmatic level, the reductionist model prevails over the model of a unified ultimate Self. The attention, funding, and empowerment accorded to the products and services of the reductionist model are dominating today. Replicating human functions and responses into products that augment or replace the corresponding human components has a huge market, and in serving the market, AI will make a lot of money. At least thus far, reductionism is enjoying greater success, although the victory is not due to its metaphysical superiority. The market reality is that algorithmic models of human behaviour are proving to be especially useful—and thus profitable—in many applications both pragmatic and aesthetic.

The ability of machines to mimic human emotions and psychology has been advancing based on the conceptual model that sensations and emotions are nothing more than algorithms that have evolved over thousands of years to help humans survive. Of particular importance is the fact that the technology of these reductionist models has been immensely successful in providing gratification to distinct components of individual psychology. The new systems can successfully entice humans, seizing on specific carnal desires, fantasies, hopes, and aspirations. They offer instant gratification and turn this into habits, and eventually into digital addictions. This mechanisation of desire management hacking humans' innermost life is shown in the figure below.



Because no unified Self is required for this model to produce desirable experiences, all ideas of a unified, higher Self are rendered obsolete. Within the context of AI development, the philosophical quest for a transcendent Self becomes merely a theoretical debate with no practical use.

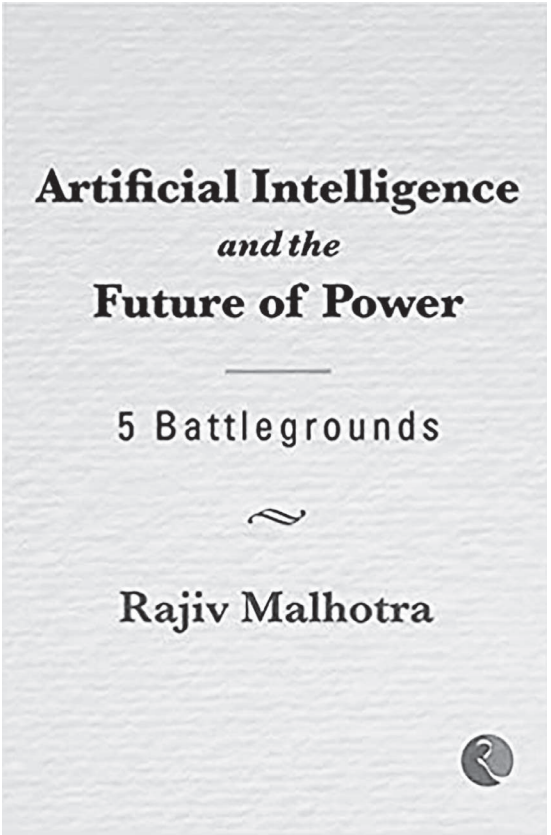
The figure below contrasts the trajectories of spirituality and materialistic gratification concerning the future of individuals. The Vedic terms corresponding to this choice between the spiritual and the material paths are *shreyas* and *preyas*, respectively. The choice of *shreyas* leads to the truth of oneself. The choice of *preyas* is one of sensual or carnal gratification that takes one away from oneself. Shown on the left is the path of meditation and other spiritual practices leading to the pure experience known as *ananda* or bliss. The entity that experiences *ananda* is the Self or Atman. Because it transcends the body-mind complex, it *cannot* be deconstructed into parts. The Atman is the *experiencer* of everything. Algorithms can model the experience, and reductionism can deconstruct the experience, but neither process touches the real experiencer or the true witness Self.



In the materialistic AI-based approach shown on the right, the external stimuli are driving individual experiences. Each stimulus targets and emphasises a specific impulse or emotion in order to produce a specific pleasure or pain, fulfilling some desire—sex, public acclaim, delectable food, entertainment, talent; the list is endless. The AI system, in effect, hijacks our cognitive and neuroscientific mechanisms by substituting, or augmenting, some natural signals with artificial ones in order to provide a predefined pleasure or pain. For example, soldiers suffering from Post-traumatic Stress Disorder (PTSD) can be treated using the machine-enabled alteration of their traumatic memories. While sitting at home, they may enjoy the experience of being on a beach—seeing, hearing, touching, tasting, and smelling the ocean—and forget the memories of the trauma.

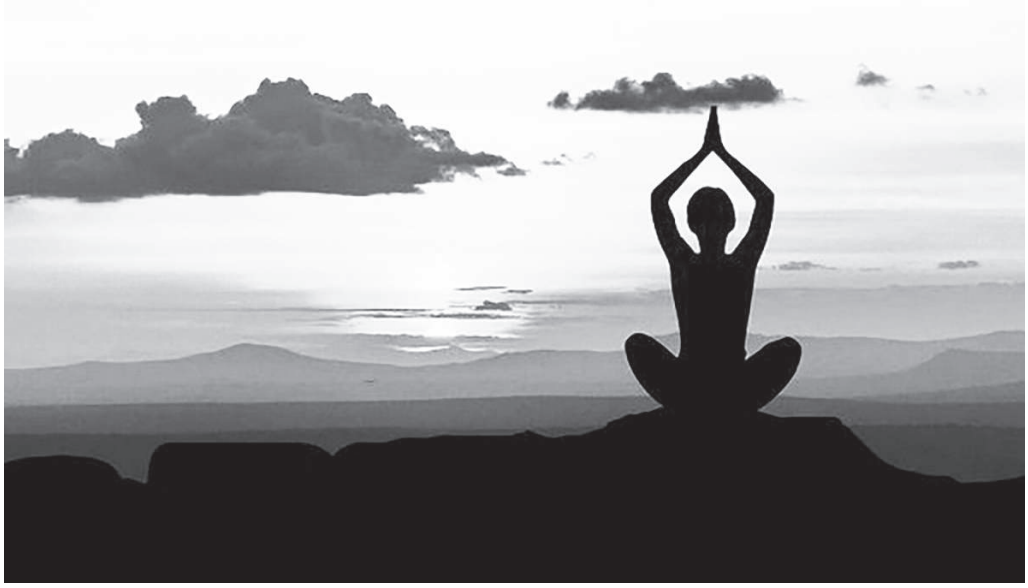
The individual pleasure or pain that is augmented can be optimised separately from the rest of the experience. In this way, each sensation or emotion can be isolated as a target for gratification. The self is broken into multiple centres of pleasures and pain, each controlled by stimuli and algorithms. This turns each type of desire into a distinct market opportunity.

The problem does not end here. I claim that there is a deeper battle for the very notion and experience of selfhood. In all the dharma traditions, the ultimate Self is divine, but this divinity is masked by the ego masquerading as if it were the Self. The spiritual process and purpose of faith is to rediscover the divinity within oneself, which is called *sat-chit-ānanda*. Many practices, including those of meditation, rituals, lifestyle choices, diet, worship, and so on focus on this. Artificial Intelligence takes a person in the opposite direction from the dharma traditional practices. It offers seductive sensations, gratifications, or pleasures using augmented reality and virtual reality, different kinds of



wearables and devices and eventually even implants that produce the right kind of hormones or neurological experiences.

All the points I have raised above lie at the heart of the battles for man's agency and his very Self. These core battlegrounds have been the arenas where Hindu dharma has pioneered the creation of an invaluable corpus of research and experiential systems for millennia. As materialism takes on a whole new level of meaning and role in human life, the challenges for Hindu dharma and its practitioners too have entered unchartered territories. Providing a commensurate response begins with dispassionate awareness and understanding of these issues; it is to this goal that I hope my book *Artificial Intelligence and The Future of Power* will galvanise debate and raise the level of discourse. PB



Living in the Digital Age—Enslaved or Free

Anju Murari-Narula

EARLY MORNING as we reach out to quiet the alarm, a similar ritual is played out by millions across the globe—a quick check of incoming messages, emails, and even the weather forecast! Even before we have rolled out of bed, we are informed, prepared, and ready to face the day.

Now, with the extraordinary circumstances of last year that resulted in complete lockdowns, partial lockdowns, and enforced isolation for many months, the ubiquity of digital information and connectivity made life bearable for many people. We could not go out in the world but the world could come to us—sanitised and very much socially distanced. A February 26, 2021 article in the *Financial Times* reminded us that 'in 1918, humanity inhabited only the physical world, and when the deadly flu virus swept through this world, humanity had no place to run. *Today many of us inhabit two worlds—the physical and the virtual.* When the coronavirus circulated through the physical world, many people shifted much of their lives to the virtual world, where the virus couldn't follow.'

A *New York Times* article, March 22, 2021, presented the 'Silver Linings from the Pandemic' as grandmothers read to grandchildren online, musicians discovered apps to play and connect with musicians around the globe, and in an astonishing ingenuity of the human race, 'zoom', 'Webex', and other platforms made virtual

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IMAGE: MOHAMED HASSAN <HTTPS://PIXABAY.COM>

meetings child's play. Online libraries of movies, music, and books were a quick click away and entertainment accessible 24/7. We were connected and how!

Regardless, neither these articles nor any Western media even mentioned our third inner world—the source of sustenance, the source of all knowledge and bliss that was suddenly primed for rediscovery!!

As a spiritual aspirant, access to innumerable talks by senior Swamis of the Ramakrishna-Vivekananda universe was a bounteous gift that provided spiritual sustenance and holy company—all without leaving the four walls of my home. As an artist, I was able to tap into a global artistic community and work with teachers and mentors that in another time would have required much travel and expense. I was beginning to thoroughly enjoy the enforced isolation.

Today as the world begins to slowly open up and will eventually, inevitably make a return to its normal routines, our dependence on digital connectivity will be here to stay and perhaps get stronger. There is no doubt that technology will provide flexibility to commuters, more work-at-home options and easy, immediate online access to people and information wherever we are. And yet, despite the positive and enriching experiences, we can hear rumblings of discontent as human beings long for human contact—the touch of a parent, a hug from a grandparent, dinner with friends and family—for while the virtual world expands, we miss the real world of flesh, blood, and tears. Even my spiritual family cannot wait to return to the physical environs of an ashrama and the physical (not online) presence of their teacher!

As I ponder this conundrum, the question isn't about digital or real-world connectivity—it is about how best we use the connections in both worlds to further our inner world. In the words of William Wordsworth: 'The (external) world is too much with us; late and soon, Getting and, spending, we lay waste our powers.'[1] Are we enslaved to the world or can it be our slave? Can we get the information we need without being sucked into a virtual worldwide web from where it is hard to extricate? Can we love and embrace the physical world without passions and attachments from whence it is also hard to extricate? If the goal of life is 'to manifest our divinity within', in what way do any of these external worlds help us? At some point, there grows a deafening roar from within and only a Vivekananda can express, with deep humanity, the cry of the soul—

> *Oh! I am sick of this unending force;*
> *these shows they please no more,*
> *This ever running, never reaching,*
> *nor e'en a distant glimpse of shore!*'[2]

Do these external worlds, virtual or physical matter not? Do these external worlds, virtual and physical offer no insights into my ultimate goal? I am reminded then of Sri Ramakrishna likening all external knowledge, even scriptural knowledge to a shopping list—a list of ingredients and recipes that is useful until we are ready to begin the real work within. And then, the list can be discarded.

I intend to fully 'use' the gifts of digital connectivity that provide spiritual company when real-world connectivity is limited but to never forget or forgo the early hours of meditation, where the real work of connecting with the infinite happens. All the knowledge we glean from the world is a first step, '*Shravana*' or listening. For *Manana* (contemplation) and *Nididhyāsana* (meditation) to follow, a deep dive into the inner world becomes imperative—for academic knowledge is one thing but becoming and experiencing are the real goal and a lifelong struggle. How elevating and soothing

to simply listen to a Vedanta talk, hear a podcast, or even attend a spiritual 'weekend' retreat, but how difficult to control the wayward mind (even momentarily) during our meditation. I am fully aware that no amount of listening or information gathering will bear any fruit without the daily practice of connecting with the self within.

Similarly, I intend to fully access digital art troves and art workshops but know they are only a primer for the hard work that awaits in the solitary confines of the art studio. It is indeed very satisfying to listen to an art discussion, read art technique books, or even converse with like-minded artists, but so very difficult to face a blank canvas or paper. I am well aware that no amount of gathering information or even the best art materials will make a dent without my putting pencil to paper, paint to canvas, and making a million discarded works of art. That, in the end, is what makes me a stronger and better artist.

Let us use the WORLD freely but be ready to shelve, store, and even walk away when the actual practice begins. *Let us use the world freely, enslaving it to our will*, for its utility is limited and eventually unnecessary. For in the succinct, unambiguous words of God Himself:

> He who's happiness is within, whose rejoicing is within and whose light is within,
>
> that Yogi, established in Brahman, attains mergence in Brahman.[3] PB

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1. William Wordsworth, *Poems in Two Volumes, and Other Poems, 1800-1807* (New York: Cornell University Press, 1983), 150.
2. *The Complete Works of Swami Vivekananda*, 9 vols (Calcutta: Advaita Ashrama, 1–8, 1989; 9, 1997), 6.175.
3. Bhagavadgita, 5.24.

Hold on Yet a While, Brave Heart

Swami Vivekananda

If the sun by the cloud is hidden a bit,
If the welkin shows but gloom,
Still hold on yet a while, brave heart,
The victory is sure to come.

No winter was but summer came behind,
Each hollow crests the wave,
They push each other in light and shade;
Be steady then and brave.

The duties of life are sore indeed,
And its pleasures fleeting, vain,
The goal so shadowy seems and dim,
Yet plod on through the dark, brave heart,
With all thy might and main.

Not a work will be lost, no struggle vain,
Though hopes be blighted, powers gone;
Of thy loins shall come the heirs to all,
Then hold on yet a while, brave soul,
No good is e'er undone.

Though the good and the wise in life are few,
Yet theirs are the reins to lead,
The masses know but late the worth;
Heed none and gently guide.

With thee are those who see afar,
With thee is the Lord of might,
All blessings pour on thee, great soul,
To thee may all come right!

IMAGE: HTTPS://DSIM.IN

Emerging Technologies and National Security

Arvind Gupta

Introduction

Emerging technologies are revolutionising all walks of life: rich or poor, man or woman, old or young—no one is untouched by their impact. They raise profound philosophical, ethical, and moral questions for our age. The relationship between humans and machines is evolving. Having a widespread impact on state, society and the individual, they have a unique place in the national security matrix. What are emerging technologies and what are the associated benefits and risks they bring?

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Technology will play a great role in India's emergence as a major power. India is adapting to these technologies with great enthusiasm. A billion Indians have a cell phone, about 500 million have an internet connection, and billions of transactions are registered every month in the national payment system. E-commerce platforms have transformed the retail trade. During the Covid-19 lockdown period, technology brought in '*work from home culture*'. Technology is being used for online money transfer, health and education, entertainment, tourism and travel. Technology helped people to navigate the lockdowns during the Covid-19 period.

No doubt, there is a digital divide in the country. Not everybody has a smart phone or

fast broadband connection. But with the massive investments in digital infrastructure, the digital divide would be bridged gradually. Access to broadband connectivity and smartphones is being improved. Several lakhs of kilometres of optic fibre has been laid out to reach every panchayat in the country.

The rapid invention, production, and deployment of coronavirus vaccines was nothing short of a miracle. Usually, vaccine development happens in the time frame of decades. India has started the world's largest vaccination programme with the aim of immunisation of its entire adult population. Such a massive mission would not have been possible without the deployment of technology at a huge scale.

Technology is present everywhere in visible and invisible forms. While the ubiquitous mobile phone may be the visible manifestation of new technologies, the increasing share of renewable energy in India's overall energy mix is a revolution that is not easily visible. The reduction of carbon dioxide emissions due to the use of renewable energy and more efficient technologies is a great achievement. India is today on course to fulfil its commitments under the Paris agreement on climate change.

Indians have been adept at absorbing new technologies. Even sixty or seventy years ago, India showed faith in the latest technologies. Although poor, it devoted considerable intellectual and material resources for peaceful uses of space and atomic energy to find technical solutions to developmental problems. The use of satellites in the education sector in the INSAT programme in the seventies is an example. The green revolution in agriculture and the white revolution in milk production took care of our food and nutrition security. India also invested in industrial technologies, agriculture, pharma, and a host of other technologies to leapfrog the development cycle. India was well-positioned to take the advantage of the opportunities in the IT sector and emerge as a world leader in the nineties. The process continues apace.

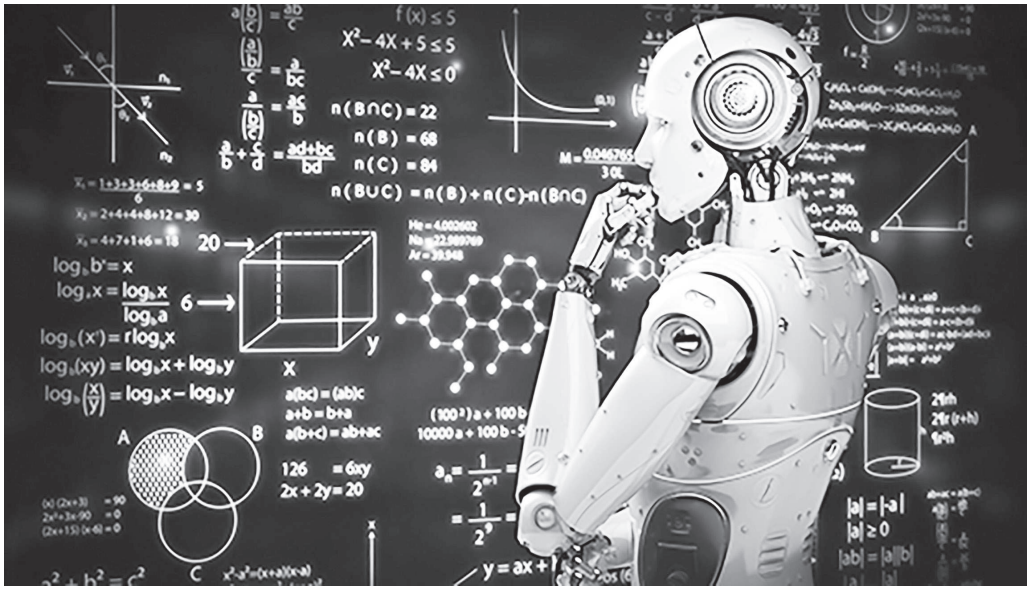
All this would not have been possible without investment in human resources. A large number of institutions of higher learning were set up to meet the needs of research and development and skilled talent.

With the rapid advances in communications and computing technologies, the world is in the throes of multiple technological revolutions. Artificial intelligence, machine learning, big data analytics, cloud computing, industry 4.0, 5G, Internet of Things (IoT), and the like have become household names. While these technologies have been under development for the last several decades, they have come into their own in the last 5 or 10 years. They are basic technologies that can be used in a variety of circumstances.

Emerging Technologies

Artificial Intelligence (AI) is the simulation of human intelligence processes by machines. **Machine Learning** (ML) is the ability of a machine to learn on its own from the data fed into it. It uses a variety of algorithms to make sense of the patterns, remember them and also innovate. We are using ML on an everyday basis, for example, in face recognition systems used by security agencies, voice recognition systems used by virtual personal assistants; and in e-tailers making recommendations to customers. AI and Machine Learning find applications in discovering new drug molecules. Also, AI/ML have applications in agriculture, health, transport, and electric transmission.

Artificial intelligence is being used in making electricity grids smart. Today's transmission grid can predict the electricity loads, which might be encountered under different circumstances.



That way, the grid operator can adjust the functioning of the grid so that it does not fail. Image analysis of transmission lines can lead to predicting likely faults in the grid so that advance action can be taken. Such technologies can also be used in weather forecasting. The sky is the limit for the application of emerging technologies. Each application revolutionises the way we behave and function.

Robotics combines artificial intelligence with engineering. Robots are designed to do repetitive and even dangerous tasks which humans cannot perform so well. The field of robotics is growing rapidly. Efforts are being made to make advanced robots that can take decisions on their own. Apart from being used in a host of industrial sectors, today's robots can also conduct Buddhist funerals, deliver services at hotels, make shoes and stitch garments, supervise workers, write prescriptions at hospitals, and do camel riding.

Big Data Analytics has become indispensable to a host of sectors that use large data, from a variety of sources. The advanced analytic techniques can analyse data in different sizes from terabytes to zettabytes. Cloud computing is the delivery of computing services over the internet. Google Drive is an example of cloud computing.

5G telecommunication technologies are being rolled out in many parts of the world. In India, 5G trials are about to start. This 5th generation technology will increase the data download speeds to 20 gigabytes per second, which is 10 to 100 times faster than that allowed by the current 4G technology. *Volume, velocity, variety, veracity,* and *value* are the five key features of 5G and Big data analytics. 5G technologies will be able to handle a vast amount of data at superquick speed. This will improve connectivity and give rise to a host of new applications.

5G will give a massive impetus to the Internet of Things (IoT)[1] connectivity towards which the world is rapidly moving. In a world of 7 billion people, we already have about 20 billion interconnected devices. With the onset of 5G

IMAGE: HTTPS://FUTURESKILLSPRIME.IN

technologies, connectivity will grow exponentially. IoT is there in all sectors ranging from consumer products to fleets and logistics, and also from infrastructure to the health sector.

Data

This is the age of data. Data is the new oil. Modern technologies need data for development. The large social media platforms sit on a huge amount of data which citizens are providing them almost willingly and without questioning. Data privacy has emerged as one of the biggest national security issues. It is also an issue that underpins international security. Many countries have enacted data privacy laws that provide certain safeguards to individuals' data.

India is also discussing a provisional data privacy law that is presently under the consideration of the Parliament. India as a large and growing country, has the tremendous advantage of generating huge amounts of data. But India will have to learn how to use this data so that national security is not impacted adversely, the individual is safeguarded, and at the same time, data is used by technology developers to develop applications that help everyone. This is a major challenge. The recent friction between the government of India and the social media giant Twitter is concerning how Twitter uses the information uploaded by users on its platform.

Breathtaking advances are being made in the area of biology. For instance, Synthetic biology, mimicking natural biological processes, aims at creating artificial biological pathways and organisms by modifying the existing natural biological systems. It can help invent new medicines to treat malaria and cancer. It can also be applied to produce hydrogen fuel or clean marine pollution. A range of *'enhancement technologies'* will help augment the individual's capacity to perform tasks better and more efficiently. This could have an impact on future job prospects. Such technologies could increase stamina, increase motivation, reduce stress, and have a relatively illness-free old life.

An outstanding feature of emerging technologies is that they tend to converge to produce newer technologies. They bring enormous benefits but also risks and challenges. Most of these technologies are being developed in the developed world. The developing world is reduced to being their passive consumer. Lack of affordable access to newer technologies can create haves and have-nots in society.

National Security

In the sphere of national security, technology plays a big role. The history of warfare is the history of the application of ever newer technologies to warfighting. From the invention of stone-throwing devices to nuclear weapons, the techniques of warfighting continue to evolve. New technologies have brought in the concepts like the Revolution in Military Affairs, cyber warfare, hybrid warfare, information warfare, drone warfare, and many more. Countries are already experimenting with autonomous weapons systems that use artificial intelligence and other new technologies. Simulations, big data analytics, augmented and virtual reality technologies—are being used in the new generation of weapons systems. Pilotless platforms, killer robots, drone swarms, sea submersibles, autonomous ships, electromagnetic weapons, hypersonic missiles, and so on use modern technologies to evolve more lethal, more efficient systems.

In the Gulf War of 1990, the United States demonstrated how Saddam Hussein's large army could be neutralised and paralysed without firing a shot. Iraq's airspace was made dysfunctional through a host of new weapons systems which

used a suite of technologies from satellites to electromagnetic weapons. The technologies used in the Iraq war led to the Revolution in Military Affairs (RMA) which was centred around closing the OODA loop (Observe, Orient, Decide, Act) that involved filtering available information, contextualising it, and making an appropriate decision. The 'sensor to shooter' approach in RMA relied on the coordinated use of information gathered from a variety of sensors like readers, satellites, and cameras. The raw information, when fused through the use of computing technologies, produce unmatched battlespace awareness that could be communicated to field commanders and soldiers in real-time. Better awareness of the battlespace is then used to shoot accurate weapons to destroy the enemy's airfields, artillery, and armoury even before the enemy could be alerted.

The RMA further spawned technologies that are revolutionising modern warfare. In Afghanistan, the Americans used satellites and drones in combination to collect information on terrorists in the remote corners of the country and destroyed them through lethal missiles. President Obama watched live from a small room in the White House the killing of Osama Bin Laden by the American forces.

As cyberspace grows and expands, the concept of cyber warfare is maturing rapidly. Almost every kind of information passes through servers, computers, optical fibres, and a variety of other equipment in cyberspace. Cyberspace is both borderless and anonymous. The ability to enter somebody's network without being noticed has raised countless possibilities of how sensitive information can be stolen, systems can be tampered with or even destroyed anonymously from remote locations thousands of kilometres away. In 2007, a software worm 'stuxnet' was used by intelligence agencies to infiltrate into the Iranian uranium centrifuge system to thwart the latter's uranium enrichment plant.

Cybersecurity has emerged as one of the most salient issues in international security, at par with weapons of mass destruction. It was a top agenda item for discussion in the Biden-Putin summit in June 2021. The problem is that there are no agreed norms of behaviour in cyberspace. Unlike the nuclear, chemical, and biological weapon systems, there is no international treaty governing the norms and behaviour in cyberspace. The non-state actors populate cyberspace as do the state actors. Most of them are invisible and can cause huge damage.

Critical infrastructure systems of any country—oil and gas pipelines, heath networks, electric grids, stock markets, banks, transport networks, air traffic controllers, industrial systems, government databases, and many more—are vulnerable to cyber-attacks. This creates a grave national security risk. Recently, the Colonial Pipeline that supplies oil to the east coast of the US, was targeted by hackers who captured the pipeline's control systems and made it dysfunctional, thereby disrupting oil supplies. In this ransomware attack which made global headlines, the hackers demanded and were paid about US$ 5 million to hand back the controls. This is just one of the many examples of ransomware attacks that have become quite common. Ransomware and cyber extortion are some of the most rapidly growing cybercrimes.

Anonymous hackers pose a grave danger to national security. They work alone, or as part of criminal syndicates. Sometimes they are sponsored by states also. There have been a large number of cases in the last few decades of spectacular cyberattacks. Attackers have been able to get into the electric grid systems, nuclear centrifuges, banking networks, stock

markets, health and education networks, and the like. Attacks on critical infrastructure can cause major socio-economic disruptions. During the Covid-19 lockdown phase, cyberattacks have increased manifold as most people were working from home.

Apart from the attacks on critical infrastructure, cybercriminals also target individual firms and even individuals. It is estimated that the illegal cybercrime industry at about US$8 trillion, is today larger than the global oil industry. It will cross US$ 10 billion by 2025. But these are guestimates. No one knows how big is cybercrime is today.

As governments, firms, and companies build large databases of their citizens and customers, it is but natural that a huge amount of personal data would reside outside the control of citizens. Google, Whatsapp, or Twitter, know a lot about our tastes, choices, and behaviour. Artificial intelligence can make patterns to reveal facets of our personality which are not known to us. They can reveal personal secrets which put an individual at the risk of manipulation.

Many cyber attackers have targeted the personal data of users. Such data is sold in the cybercrime market in the invisible dark web which is estimated to be capturing 99% of the overall Internet. Cybercriminals like drug traffickers, pornographers, child abusers, terrorists, organised criminal syndicates and so on thrive in the enormity of the dark web. The reach of the state in the dark web is limited. Thus, cyberspace has impacted and diluted the sovereignty of the nations.

The misuse of social media platforms for spreading hate, disharmony, or inciting violence has become quite common. New technologies permit fake news, deep fakes and the like to spread rapidly across the world in no time. Controlling and regulating social media platforms is a major headache for security planners. Lives can be lost through the viral circulation of manufactured news, videos, and tool kits. Anti-social elements, organised criminals, terrorists, and others are able to use social media for their nefarious purposes. The debate about free speech has only confused the issue further.

Concerns

While technology has obvious benefits, the underside of technology cannot be ignored. Artificial Intelligence, for instance, is an extremely powerful technology that has the potential of enabling machines to make autonomous decisions independent of human agency. Today's software is in a position to defeat the best of grandmasters in chess quite easily. It can recognise a face out of a million images that would otherwise confound a human. These technologies are being used in producing a new generation of weapons that can act autonomously and independently. This can potentially create a dangerous situation in which autonomous systems, independent of human agency, can take independent decisions. *This is no longer science fiction*.

Technologies raise profound questions about existence, life, and human agencies. Scientists today can use gene-editing technology to produce customised biological organisms. In 2019, a Chinese scientist claimed that he had been able to produce customised babies whose gene CCR5 had been edited using the so-called Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) technology. The revelation shocked the world. The scientist was arrested by the Chinese authorities for having worked without authorisation. But the potential of gene-editing technology had been demonstrated. Such technologies allow humans to play God. Most technologies have dual uses. CRISPR technology is used as a tool in cancer research. That is its beneficial aspect. But it can

also be misused to make customised babies. That is its downside.

New technologies, while revolutionising manufacturing and commerce, thereby producing immense wealth, are also displacing jobs and even destroying them in many sectors. Freelance, temporary jobs, or gig economy jobs are more abundant than permanent jobs. Further, new technology applications require new skills. This necessitates repeated relearning and reskilling which can be a stressful experience. In some situations, new skills may not even be available. One often sees the older generation of people struggling with technology to get around their daily lives. We saw how many people found it difficult to register themselves on the *Cowin app*[2] for getting themselves vaccinated against the Covid-19 pandemic either because they did not have the access to computers or they found it daunting to find their way around the app itself.

As people spend more and more time in the virtual world, they begin to lose connection with the real world. Alienation creates serious psychological and social problems. During the Covid-19 times, doctors have warned of a psychological pandemic as people have been affected by lockdowns as well as loss of relatives and close friends, particularly during the second wave. They were also spending a disproportionately huge amount of time in the virtual world. Teaching went almost entirely online. Children as young as four or five years old were exposed to online teaching. Social interaction reduced virtually to nil. While technology showed a way out of a difficult situation, it also aggravated alienation.

Conclusion

One cannot deny that disruptive technologies are becoming ubiquitous. They afford immense benefits to mankind but also come with many risks. The future is connected. AI, ML, and other disruptive technologies are already transforming the world. They have speeded up social as well as behavioural changes. Frequent disruptions can be deeply unnerving. But we will have to learn to live with them.

Ironically, in an age of automation where technology will take key decisions for us, the need for spirituality will also grow. People, intimidated by technology, will search for meaning in their lives. One hopes that technology will not become so overpowering that human autonomy will be completely lost.

The age of IoT, an era of hundreds of billions of interconnected devices talking with each other 24x7, is already upon us. But not all of these devices are secure. This creates vulnerabilities that can trigger massive disruptions. This can have serious fallout on national security.

So far humans control machines, but machines are also becoming smarter. What will the world look like when machines become better than humans? Will machines develop a conscience? That may not happen immediately but we should keep our fingers crossed. Already, human dependence on machines has increased exponentially. When machines begin to make decisions for us, we enter into a new era. That era is already upon us. *The biggest challenge will be managing the relationship between humans and machines*. PB

Notes

1. The Internet of Things (IoT) describes the network of physical objects—'things'—that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet.
2. A software application of the Government of India for the registration of Covid-19 vaccination.

Surmounting Digital World Challenges in the March Towards Utopia

Prof. Dr Rao Tatavarti

Tremendous advances in digital technologies have no doubt ushered in many facilities to the people around the world resulting in better lifestyles and health. But at the same time, they have also brought in associated challenges detrimental to society at large. This article discusses the recent advances in science and technology in general— cognitive sciences in particular, to highlight the persuasive power of the narrative on the human psyche. Further, showcasing how the power of narrative is being used by governments and big corporations for surveillance, intelligence gathering, and business purposes, the article highlights the narrative power of the Indian philosophies and fables. These, from time immemorial, are building and framing the Indian psyche and ethos for realising a better society. Keeping in mind the unique opportunity the nation enjoys today, the article suggests and argues that Indians should harness the demographic dividend by utilising technological advances for inculcating moral and ethical values propounded in the Indian philosophies and fables. Using the above arguments, the article concludes that necessary mechanisms *can and should* be built to realise a better, and perhaps, utopian society tomorrow.

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Life in the Digital World

Not very long ago, the commonly held belief was that *land*, *labour*, and *capital* were the key

IMAGE: HTTPS://VIR.COM.VN

drivers of an economy, while intellectual pursuits and scientific knowledge had no role in improving human lives and nation-building. Today, tremendous advances in digital technologies—especially in the fields of Photonics, Biomedical Technology, Information and Communications Technologies (ICT)—have enabled people across the world to:

- enjoy a better and faster means of communications and stay connected even with persons far away in remote places thousands of miles away. In fact, they can stay connected even with astronauts in outer space, or with divers in the deepest trenches of the oceans.
- travel to far-flung places anywhere in the world, including outer space and the deepest ocean, through sophisticated and faster modes of transportation.
- lead more luxurious lifestyles.
- access and utilise better healthcare and medical facilities.
- live longer with increased lifespans.
- access wide-ranging information on any subject, past or present, instantaneously.
- visualise and listen to the happenings anywhere in the world in real-time, sitting in living rooms.
- order for almost anything, from anywhere in the world and get them delivered to chosen locations with remarkable speeds.
- teach and learn any art or subject online.

Challenges for Digital Utopia

Not surprisingly, the recent technological revolutions underpinning human advances, improvements in health systems and the overall lifestyles of people across the world, have now completely overturned the earlier beliefs. So much so, that today, digital technologies are unquestionably accepted as the harbingers for better and healthier lives and secure and prosperous nations.

This paradigm shift in the public perception, often misleads the layman to believe that the advances in science and technology pertaining to the digital world are the stepping stones on the path to utopia—an ideal society in which laws, government, and social conditions are solely operating for the benefit and well-being of all its citizens.[1] Technological utopianism is often associated with discourses presenting technologies as agents of social and cultural change.[2-3]

The logic of digital utopianism often imagines that digital technologies can be the panacea for all the problems of society; and that they are the means for attaining eternal peace, happiness, and prosperity, since technological utopianism naively views only the positive impacts of technology.

Digital utopian critics, therefore, rightfully claim that techno-utopianism's identification of social progress with scientific progress is a form of positivism and scientism. They point out that technological utopia is a misguided optimism, as science, technology, and society cannot be seen as independent, as should be construed as interdependent. The critics also say that the philosophical reflections on scientific activity and technological doing are essential in understanding the effects on society.[4]

Against this backdrop, this article attempts to carry forward the utopian exuberance of the digital world vision, by projecting it on a perceived model of socio-technological innovation that hopefully can translate into a more pragmatic reality in the march towards digital utopia.

Impact of Digital Transformation on the Digital Generation

Digital Transformation is the adoption of digital technology to transform manual processes with digital processes, or replacing older digital technology with newer digital technology. Digital solutions generally enable efficiency

via automation. Today, we live in an interconnected world, empowered by invisible networks of instant communications and various modes of transportation, facilitating communications and movements with incredible precision and speeds. Digital transformation has affected our lives in all the fields covering education, economy, business and commerce, defence, communications, transportation, health, and medicine, and hence has a significant impact on the common public.

Digital transformations have immensely affected young people's lives in more significant ways. Today's youth form the *digital generation*—a generation of people born in the digital era that has grown up with access to digital information and possesses abilities to navigate new communication technologies. These have a tremendous impact of information and communication technology on youths' ideology, organisation, mobilisation, and the societal structures which underpin their way of living.[5-6]

Today for the youth, social media serves as an avenue for civic participation. It affects their norms, values, attitudes, and behaviours regarding democracy, power, politics, policymaking, social, and political participation— both online and offline, and the organisation of economic, social, and private life.[6]

Science, Technology, and Society

Today, we are all more conversant with the field of Information and Communication Technologies (ICT) comprising of the internet, virtual reality, and robotics and the many fascinating pathways for progress they promise. Recent developments have ushered in new fields like Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning (DL) into the realm of public knowledge and our everyday lives.

In simple words, Artificial Intelligence (AI) involves machines that perform tasks, characteristics of human intelligence—like planning, object recognition, sound recognition, understanding language, learning and finally problem solving, while Machine Learning (ML) is a way of achieving Artificial Intelligence. Deep Learning (DL), although different from Machine Learning can simply be stated to be one of the many approaches to Machine Learning primarily inspired by the structure and functioning of the human brain, wherein huge amounts of data are processed and analysed to arrive at intelligent solutions using what is called as *predictive analytics*.

It is against this backdrop, of huge advances made in AI, ML, and DL, that we look forward to solving many of the pressing societal problems by *allowing* and *training* machines to arrive at the best judgements objectively by resorting to Deep Learning technologies. This may significantly result in (i) the elimination of bias so common in conventional designs by engineers, and (ii) phenomenal multiplication of the speed of delivery of desired outcomes. It is hoped by many scientists and researchers, that using appropriate AI, ML, and DL tools may result in eliminating and adjusting the associated imbalances in the society so that national progress is unimpaired.

Smart algorithms, Natural Language Processing (NLP), Machine learning, and Big Data technologies are used to create analytics and insights. NLP is designed to be inherently language agnostic, or genomic with text mining. In simple terms, NLP can be construed as an area of artificial intelligence research that attempts to reproduce the human interpretation of language. With the advent of the World Wide Web, XML, and the World Wide Web Consortium's (W3C) Resource Description Framework (RDF), the *realisation of a fully communicating artificial intelligence*, earlier considered a science fiction fantasy, is fast becoming a pervasive reality.[7]

People often wonder, how their personal computer, phone, or tablet has the uncanny ability to showcase information suiting his or her tastes and perceived behaviour. They would be surprised to realise that Deep Learning is now responsible for conversation-carrying *chatbots*, Amazon Alexa, Facebook, Google Assistant, Instagram, Microsoft Cortana, Twitter, YouTube, and more in our daily interactions with computers. It is imperative to realise that on social media and across search engines like Google, Bing, Chrome, Microsoft Edge and the like, the algorithms based on Deep Learning are the ones that *churn out content and suggestions based on perceived individual preferences, biases, and tastes*.

Few people are aware of the significant developments in the fields of Linguistic Genomics and Deep Learning, which make it possible to learn, not only about the *content and preferences* of people using the internet, but also, make accurate inferences regarding the *intent* of the users. This kind of information is now routinely being used by various governments, corporations, and intelligence agencies for surveillance and intelligence gathering. Not surprisingly, it is Deep Learning and Linguistic Genomics that is now helping companies and corporations customise their advertising to individual tastes.

It is of paramount importance, therefore, to understand that however essential science and technology are considered, the assumption that the tools of science and technology would always be deployed with altruistic intentions in a society, is at best *naïve*, and at worst, extremely perilous. One need not dig deep into the checkered history of humankind, to realise that unbridled ego, self-centred ideas and ambitions, greed for wealth, power, and pelf—have caused immeasurable and widespread devastation in our world.

Prudent pragmatism, therefore, suggests that the myriad complexities of societal structures demand that the public discourse, narrative, and consensus as essential ingredients ensure responsible deployment of tools of science and technology in a society.

The Power of Narrative

The human brain is considered the most complex, sophisticated, and powerful information-processing device known. Today the breakthroughs in Brain and Cognitive Sciences reveal that it is the *narrative* that can be persuasive and powerful. A narrative can entertain, inform, and persuade—*but most importantly, it can forge a deep, meaningful, and lasting connection*.[8] Most of us realise that when we listen to a narrative, whatever our age, we get vicariously transported to another time and space. Most of us have also experienced that depending on the narrative that we read, watch, or listen to, our palms start to sweat, eyes blink fast, and our heart flutters or skips a beat. A growing body of brain science and cognitive psychology has brought additional insights into what is behind these experiences, and based on functional MRI scans, it was discovered that many different areas of the brain light up when someone is listening to a narrative.

Lo and behold, now all the professions have a compelling interest in how the brain works. Educators, curriculum designers, engineers, scientists, judges, public health and safety officials, architects and graphic designers, and especially big business, mega-corporations, and governments—all want to know more about how the brain processes information. Brain research and its resulting applications have now become an integral part of how corporations and organisations function and succeed. It is against this backdrop of the power of narrative and the feasibility of deploying the same for narrow-minded and self-centred motives, that sufficient

checks and balances need to be put in place in the digital world.[9-10]

Power of Narrative Enshrined in Indian Philosophy

Digressing from the present narrative on the recent advances in Brain and Cognitive Sciences brought about by research, conducted primarily in the Western world, if one were to indulge in *divergent thinking* and *ponder*, it would be pleasantly surprising to note that the importance of the power of narrative was well recognised by the venerable sages of India, from time immemorial. Indian ancestors had the wisdom to guide, disseminate, and help people imbibe the great virtues, ethics, and morals. Indian psyche and culture are eternally punctuated and peppered with the philosophy garnered from the Vedic period (1500 BCE–600 BCE), the Epic period (600 BCE–200 CE), and the Sutra period (from 200 CE).

The Vedas, Upanishads, and the eighteen Puranas are in Sanskrit, which is perhaps the oldest recorded language of the world. The four Vedas comprise the Rig, Sama, Yajur, and Atharva Vedas. The Vedas are considered the oldest extant literature. The Vedas collectively refer to a corpus of ancient Indian religious literature that is considered by adherents of Hinduism to be revealed knowledge.

The two famous works that are synonymous with the epic literature of India are *Ramayana* and *Mahabharata*. These two classical epics of India are written in ancient Sanskrit and present the most common ideals of human civilisation and where the value of truth, the importance of self-sacrifice, and so on—that make good human beings—are explained in much detail. The Indian epics are full of moral teachings and sacred discourses that are relevant eternally for a utopian society.

Although the world is aware of the role the great epics—Ramayana and Mahabharata—play in guiding our everyday lives to lead a righteous, moral, and meaningful life with good values, a lesser number of people are aware of the role played by *Panchatantra* and so many other fables, in helping people lead a good and meaningful life.

To the uninformed, *Panchatantra* is perhaps one of the oldest collections of Indian fables still surviving. *Panchatantra* (*Five Treatises*) is an ancient Indian collection of interrelated animal fables in Sanskrit verse and prose, written by the great Hindu Scholar Pandit Vishnu Sharma, around 200 BCE.[11-13] It is considered as *Niti-Shastra*—an essence of maxims on proper conduct. The book is written in the form of simple stories and each story has a moral and philosophical theme that has stood the test of time in the modern age of atomic fear and madness. Therefore, it guides us to attain success in life by understanding human nature.

Demographic Dividend and the Digital World

A 2019 United Nations report[14] on the young population of the world points out that about 16% of the global population (around 1.2 billion people) are youth, aged 15 to 24 years. India's youth comprise more than 50% of its population (around 695 million) forming the unique and often bandied about the demographic dividend, which is hoped to leapfrog the nation to greater heights of development.[15] Juxtaposing these statistics with UNICEF's State of World's Children report[16] elucidates that one in three digital technology users is younger than 18 years, and 71% of 15–24-year-olds are online, making them the most connected age group worldwide. Out of this young population, almost 75% are known to be deeply associated with digital tools, spending most of their wakeful hours in the digital world. It is therefore not surprising that digital technologies have profoundly changed the youth,

children, as well as infants of today. Digital information and communication technologies like the Internet, World Wide Web, and the means to access it, such as computers, iPods, iPhones, tablets, and smartphones, along with social media platforms and messaging apps, have become inseparable and integral to the lives of infants, children, and the adolescents around the world.[17]

A common experience most of us are subjected to these days is that people (more often the youth) are more withdrawn, indifferent, and at times insolent. Even family members and friends sitting next to each other are generally seen twiddling their thumbs, engrossed in their smartphones. Studies have shown that there are clear problems and issues linked to becoming *digital slaves* and failing to develop adequate social networking by transforming into self-centred individuals. They generally have these undesirable traits:

- lack of emotional connection,
- propensity to be hurtful,
- decreased face-to-face communication skills,
- inauthentic expression of feelings,
- diminished understanding and thoughtfulness,
- disinterested and disconnected face-to-face interactions,
- laziness,
- skewed self-image,
- reduced family closeness, and
- constant distractions.

For the digital generation, therefore, the digital world has left an indelible mark and significantly transformed their daily lives, education, and learning, the way they make and maintain friendships, how they spend their leisure time, and their engagement with wider society. The undesirable traits which are often reflected in the youth of today have a pernicious influence on the society at large, as they comprise an overwhelming majority of the Indian population.

The Solution to Overcome Challenges—March towards Utopia

For a nation like India, where youth are clearly projected to be the demographic dividend for the nation's development, it certainly pays rich dividends—if we can effectively persuade the young to develop core values and abilities to solve the problems threatening to tear the fabric of an ideal civil society.

Recent studies have demonstrated how the young people of today can become caring family members, innovative workers, ethical leaders, and engaged citizens in an increasingly complex society, by inculcating the core moral and ethical values and abilities of *adaptability*, *creativity*, *curiosity*, *compassion* (*empathy*), *enthusiasm*, *integrity*, *positivity*, *resilience*, *resourcefulness*, *self-awareness*, *and sociability*. Interestingly, these are the very core values, morals, and ethos that are taught by the great Indian Vedas, Epics, Puranas, and Fables like the *Panchatantra*.

Studies have shown how families, schools, and communities can play critical roles in raising and educating tomorrow's citizens by nurturing, imbibing, and inculcating the core values and ethos needed by youth to navigate their lives in meaningful ways in their chosen endeavours to become good, caring human beings, and engaged citizens of the community.[18]

Against this backdrop, it is argued that utilising the advances in digital technologies and employing the power of the narrative, systematic mechanisms *can and should* be built to nurture, imbibe, and inculcate the moral values and ethos into the sensitive minds of the youth, as reflected in the Indian philosophies and fables.

The idea to manipulate the content for the young consumers to help constantly reify their moral and ethical constructs may be contradictory to the common beliefs.[19] But it is argued that however contrarian it may sound, it is

nevertheless worth pursuing, as irrefutable evidence exists on how ideas—originally thought to be unrealistic, unreachable and a utopian fantasy—can become a reality in our lifetime.[20] In fact, we do have a very good example of how the digital world can be reified to imbibe the age-old ethical and cultural values encapsulated in our age-old *Upanishads*, if one were to view the 2012 Tele serial *Upanishad Ganga*, created and conceptualised by Swami Tejomayananda of Chinmaya Mission with a vision to take the message of *Upanishads* to the masses.[21]

On a concluding note, despite the challenges brought about by digital technologies of today, it is imperative that we safeguard, nurture, and goad the younger generations through the digital technologies themselves to become good human beings by inculcating the core moral values and ethos as enshrined in Indian philosophies and fables. This is a necessity for enabling tomorrow's dream of a utopian society.

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Coexistence of Spirituality and Science

Dr Autar K Mattoo

Much has been written and equally a lot debated about spirituality and science. Can these two co-exist is a question that has generated different viewpoints across the world! Ancient India was spiritually rich; brought forth by the wisdom of rishis, enlightened souls, and other scholars. When science was still in its infancy, the Yogi (a person practising Yoga) interpreted that just as a microscope or telescope was the means for a scientist to explore the external world. For the Yogi, the means involved pure, highly focused, and internalised mind (meditation) to explore the internal world. Yoga which has caught the imagination of today's world has also led to the thought that in the evolution of nature, 'matter' is not the ultimate and that the mind can also evolve.

It is also known and established that spiritual experiences do happen and have changed the course of life of innumerable people introduced to Yoga. Early spiritual seekers wandered to find enlightened masters in the hope to seek their guidance and to delve deeper into yoga, tantra, and mysteries of nature. The prior discord between spirituality and science seems to have waned since objective clarity about yoga and its positive impact on human life have become apparent. Innumerable books are now available for the seeker to explore the length and breadth of prior human experiences. These provide depth of knowledge illustrated by true experiences to form the *science of spirituality*.

Yoga is ancient to India and its practice and knowledge get deeper as one learns more about yoga traditions. The whole mental health is thereby under control and peace surges in mingling with the body. It is no wonder that the practitioners of yoga are now widely spread around the globe. This is because yoga is seen not just as a religious practice but rather as a depth of knowledge and practice that is good for both physical and mental health. Yoga is a valuable tool being utilised within the healing profession and incorporated into therapeutic techniques for the good of all. Thus, the science behind yogic knowledge has substantiated that body-based subtle energy exists and it has physical and psychic properties.

Swami Satyananda Saraswati stated that when scientists looked deeper into matter and mysteries, they found that, in regard to the evolution of nature, matter was not the ultimate. The idea that mind can be transformed and made to evolve has changed an era of thinking. The inner experience is known to the serious practitioner of spirituality and the knowledge seeker.[1]

Rafael Espericueta, a professor of Mathematics at Bakersfield College, USA enunciates

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that through both spirituality and science, one can seek the truth and grasp the nature of reality:

> The goal of science is a complete understanding of the fundamental principles underlying the physical universe in all its diverse forms. Spirituality is the awakening of wisdom concerning how we effectively relate to each other and to the world. Science seeks to enlighten our minds, while spirituality seeks to awaken our hearts. Each is necessary for a full fruition of the other.[2]

Also, Aldous Huxley, the well-known 20th-century philosopher, seems to be in perfect accord with the mystical invariant and thereby has no conflict whatsoever with science. Albert Einstein also delved deep into understanding and experiencing the sensation of the mystical. Regarding spirituality, Swami Vivekananda suggested that none can teach you but your own soul, to grow from inside out. Spiritual knowledge is pious and provides stability to oneself. Yoga professes self-transformation from impure to pure consciousness to achieve inner peace and helps us to move in a positive direction. *Kasey Crown* a psychotherapist, wellness educator, and writer says:

> For a nerdy, scientifically minded spiritualist and psychotherapist like myself, the fact that more and more scientists and medical and mental health professionals are stepping forward to share their own stories of higher consciousness and the mystical feels exciting and opens the door for more people to walk through.[3]

Certainly, there is more to apprehend in consciousness and trust our intuition the same way we produce and rely on scientific data.

Let me digress a bit. The human mind is of a peculiar inference and at times subjective. Swami Vivekananda, during his travels, also visited twice the spiritual places in the valley of Kashmir (years 1897 and 1898). His experience while at the shrine of Kshir Bhavani temple is worthy of note. Swamiji pondered over the ruination and desecration of the temple by invaders.

> Surveying this desecration, the Swami felt distressed at heart, and said to himself: 'How could the people have permitted such sacrilege without offering strenuous resistance? If I had been here then, I would never have allowed such a thing. I would have laid down my life to protect the Mother.' Thereupon heard the voice of the Goddess saying: 'What if unbelievers should enter My temple and defile My image? What is that to you? Do you protect Me, or do I protect you?' Referring to this experience after his return, he said to his disciples: 'All my patriotism is gone. Everything is gone. Now it is only "Mother! Mother!" I have been very wrong. I am only a little child.' ... Another day, in the course of his worship, the thought flashed through the Swami's mind that he should try to build a new temple in the place of the present dilapidated one. ... At once the Mother said to him: 'My child! If I so wish I can have innumerable temples and monastic centres. I can even this moment raise a seven-storied golden temple on this very spot.' 'Since I heard that divine voice', the Swami said to a disciple in Calcutta much later, 'I have ceased making any more plans. *Let these things be as Mother wills*.'[4]

The foresight of Einstein is worth recalling here:

> The most beautiful and profound emotion we can experience is the sensation of the mystical. He to whom this emotion is a stranger, who can no longer wonder and stand rapt in awe, is as good as dead. To know that what is impenetrable to us really exists, manifesting itself as the highest wisdom and the most radiant beauty, which our dull faculties can comprehend only in their primitive forms—this knowledge, this feeling, is at the centre of true religion.[5]

Of course, this same feeling is also at the very heart of science. Science hones and clarifies our

spiritual realisations, even as our spiritual epiphanies inspire the evolution of science!

Science is a path of discovering living and non-living percepts of life on earth and beyond. Through the advances made in science, principles that apply to nature are uncovered. Thus, we have been fortunate to have a glimpse of cosmos, space travels, and travel across nations at a speed the earlier human, if living, would think to be magical and surreal. Similarly, medicinal discoveries have enabled humans to live longer and more healthily. Each day scientists provide new knowledge about most disciplines known to mankind. The previous ignorance is being replaced by new knowledge! The progress in scientific discoveries is reaching new dimensions broadening our knowledge and providing paths for super-speed in applications for the benefit of humankind.

The very nature of scientific discovery is that a tested hypothesis should stand the test of time and thereby advance new knowledge. The rigour of the finding(s) is tested by other experts who provide certification of the product or knowledge. It is also important to note here that most of the scientific discoveries in biology need in time to be further attested as more novel science gets explored. The discovery provides a means to further test and explore the deeper nuances; however, each first discovery has had to be modified with time as more sophisticated instruments became available and new knowledge discovered. Truly, scientific discoveries get challenged and many a time modified based on new studies and more exploration.

Therefore, concepts come and go! Times have changed! There is a great interest in exploring higher level(s) of human consciousness and focusing on whether science and spirituality can ingress with experimentation and spiritual meditation. Experiences through higher consciousness may reveal the realm of spiritual knowledge to the practitioner, similar to how scientific discoveries unearth new biological or physical knowledge. Practice in this realm is not new. In the words of Rafael Espericueta: 'It was never religion per se that conflicted with science, but dogmatism. Dogma is and has always been the enemy of both science and spirituality. The historical conflicts between science and religion are all due to the tendency of doctrine and dogma to be mistaken for religion.'[6] Such views have changed in the recent past and coordination of science and spirituality seems inevitable. Mahatma Gandhi once said that if both science and spirituality go hand in hand, then one can create heaven on the holy earth!

Rishis of ancient India were enlightened and accomplished persons who would sing hymns using a musical scale with seven notes. In fact, it is said that they were the first to discover the seven notes (*sa, re, ga, ma, pa, dha, ni*) of an octave which are similar to the relatively recent Western notes (*do, re, mi, fa, so, la, ti*).[7] The versatility of human beings in thinking, analysing, and experimenting provides them with a deeper insight into life, spirituality, and to delve deeper into Atman. Therefore, the onus is on us to dig deeper and see life from a different and deeper perspective. I think the time is ripe for looking deeper within and explore spirituality and science—the former offers a deeper perspective and unfolds the uniqueness of being human, while the discoveries through science could empower the human being to unfold the mystery of spirituality.

Some believe the paths of science and spirituality should be taken as two separate parallel paths, while those others who have dealt deeper into spirituality seem to think both are of the same coin! Many others have come forth with the perspective that spirituality and science can

work together for the benefit of mankind. For instance, I like what Alan Lightman writes: 'Science with heart will be the religion of the future. Science uncovers the abstract principles underlying nature, and spirituality informs us of the proper way to regard all this—with vast love and awe.'[8]

Interestingly, the digital world has brought a new dimension to our lives worldwide and changed how knowledge is perceived. For instance, spiritual discourses from everywhere can reach places within seconds. On a positive note, one can sift through what is available and choose anything that satisfies our curiosity or positively bring us closer to divinity. No matter whether one is spiritual or not, knowledge available certainly can bring another dimension to bear on our thought process.

Spirituality is a precious connection between us and the almighty. A deeper connection, deeper interest can bring moral duty to bear on the human and a new dimension to our lives. Within India, the new information age has led also to spirituality-based organisations that have attracted new enthusiasm amongst the population including the younger generation. Such innovative organisations have a new role to bear on national development and social welfare.[9]

My own experiences have led me to believe that spirituality and science can coexist and help us understand the deeper truths of life on earth. Being born and brought up in a pure Hindu tradition in the valley of Kashmir, I was sent to a Christian school for my studies where we would recite both biblical songs and Hindustani prayers. At home, my science teacher would teach me mathematics and science as well as get me oriented in reading the mystic Hindi books from Geeta Press, Gorakhpur. This was a commonly accepted way of teaching. In the Kashmir Valley in the late 1950s, Hindus would pay respects at Muslim shrines and Muslims would do the same at Hindu shrines. Therefore, studying different religious practices and being brought up in a Christian school was compatible. In my college years, I found friendliness all over. I made lifelong friends and felt at home in these countries irrespective of the fact that I belonged by birth to a different religion than theirs. My take from my travels has been that *spirituality is a more likeable path and empowers one to deal with science from a higher perspective.* PB

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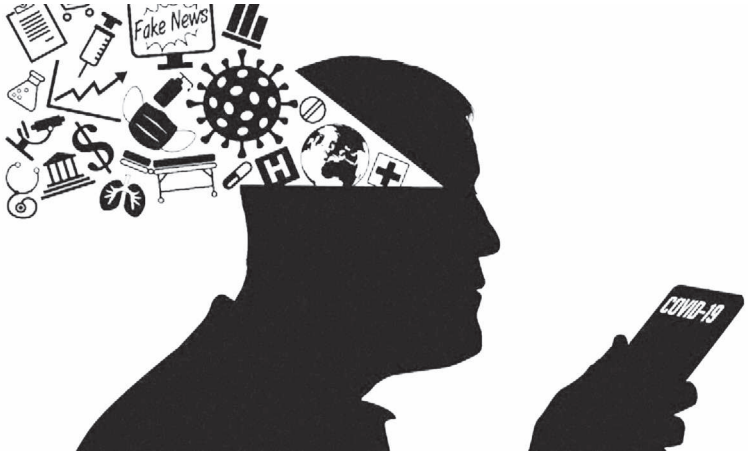

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Discerning the Real from the Unreal: Psychology of Misinformation

Usha Vasthare and Praveen Shivashankar

'Today, as yesterday, Man's major foe is deep within him. But the enemy is no longer the same. Formerly it was ignorance; today it is falsehood.' — Jean Francois Revel (in his book *The Flight from Truth—The Reign of Deceit in the Age of Information*)

INFORMATION, accurate and timely, is a crucial foundation of a functional society. Access to accurate and reliable information is always critical, but even more so during times of global crises (like the current pandemic). It can be a matter of life and death for individuals; it can make or break families, and even impact the socio-economic milieu of a nation.

The advent of Information Communication Technology (ICT) accelerated the spread of information. Social media, digitisation of print, and democratisation of information sharing were hallmark developments of the 21st century that transformed the world. While there are obvious benefits to these advancements, the offshoot was the ability to utilise these for the spread of information to epidemic proportions, prompting the World Health Organization to refer to it as '*infodemic*'. The impact of false content, whether disinformation or misinformation, is potentially the same at all levels.

Disinformation, misinformation, and fake news of scientific, socio-religious, political, or dogmatic content have been present since time immemorial and will continue to exist. However,

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their propagation amongst the masses has increased a thousandfold (viral). The content ranges from innocuous to harmful, from humorous to slanderous, and from naivety to strategic manipulation. The spread of misinformation in the blink of an eye, especially on social media, has both immediate and long-lasting impacts on everyone.

The aftermath of such an infodemic has been catastrophic, as seen in recent years. The propensity of the infodemic is compelling as it creates an illusion of authenticity. Hence, there has to be a multipronged approach to identify it and quell its spread. One of the common methodologies is regulations—guidelines, and rules that result in accounts of the violator being shut down, perpetrators being penalised or even imprisoned. This can be done at the institutional, state, national, or international levels. However, this intervention is neither easy nor straightforward to opt for. We have seen instances of this during national emergencies and in national security issues. However, thoughtless and subjective impositions will trample upon the freedom of speech and expression—a fundamental democratic and human right.

The arbitration of what constitutes 'false' information and who is responsible is a contentious topic. *It is therefore far more practical and effective to focus on individual awareness*. As consumers, influencers and generators of information, we all have a responsibility to follow our inner ethical and moral conscience while dealing with information. *This pertains to developing an evolving mindset*. This article attempts to look at misinformation from a broad scientific and psychological perspective and proposes a solution that can be implemented by every individual—enabling everyone to become informed, conscientious, and mindful consumers of information. Let us begin by distinguishing between misinformation and disinformation.

Misinformation and Disinformation

As per the dictionary, misinformation is defined as 'false information that is spread, regardless of whether there is intent to mislead'. On the other hand, disinformation is 'deliberately misleading or biased information; manipulated narrative or facts; propaganda'. Finally, fake news is 'purposefully crafted, sensational, emotionally charged, misleading or fabricated information that mimics the form of mainstream news'.[1]

Throughout this article, though the term *misinformation* is commonly used, disinformation and fake news are also implied. As an example, let us consider Deepfakes. These are synthetic media, generated through sophisticated deep learning which help in spreading malicious disinformation. Deepfakes can be particularly challenging since any form of multimedia—be it videos, images, or audio content—can be modified to resemble that of a target individual, thereby manipulating the opinions and perceptions about the individual or a situation. The sensational content in them spread rapidly across the world. Deepfakes are extremely hard to distinguish from real content. The potentially harmful consequences do not vary, no matter the intent behind sharing such misinformation—be it out of naivety or spite. They have been employed extensively for political gains and in some cases, to tarnish the reputation of individuals.

Many people unknowingly have played and continue to play a major role in the spread of misinformation. We shall now try to understand the triggers and the psychology behind our actions that lead us to play a role in the spread of infodemic.

Why Are We So Vulnerable to Misinformation?

Understanding how the human mind works gives us an insight into how to prevent and protect ourselves from believing lies. But first, we need to

understand why we are so vulnerable to false information. What leads us to believe false information to be true, and therefore spread them mindlessly?

Listed below are some key psychological constructs and concepts related to misinformation. These constructs help us not only in understanding our vulnerabilities but also in preventing the spread of misinformation. *Recognising these psychological concepts in ourselves will help us 'evolve' by using our discriminative mind, willpower, and being completely aware of the consequences of our actions.*

The following are the psychological concepts that throw light on what makes people vulnerable to accepting and spreading misinformation.[2]

1. Dual Process Theory,
2. Cognitive Miserliness,
3. Cognitive Dissonance, and
4. Confirmation Bias.

Dual Process Theory

Dual Process Theory was introduced by William James, at the turn of the 19th Century and was popularised more recently by Daniel Kahnemann through behavioural economics. It is a functional way of classifying our thinking processes. The framework explains how people think and make decisions.[3]

The crux of this concept of Cognitive psychology, as the name suggests, is based on the idea that humans have two ways of thinking—System 1 and System 2 thinking. In the authors' opinion, this is the most critical and crucial concept to understand and apply appropriately. We are '*thinking beings*' as well as '*feeling beings*'. The essence of the psychology behind the acceptance and propagation of misinformation lies in understanding when we either think first and feel later or feel first and think later.

From an evolutionary perspective, System 1 (Automatic Thinking) is older. Its main characteristics are that it is more automatic, instinctive, implicit, non-conscious, intuitive, involuntary, low-effort, and fast. Therefore, it is more efficient, more subjective, creative, and mostly linked with emotions. Because of these characteristics, System 1 makes use of shortcuts; it is a bit sloppy and therefore incorrect at times. But we usually rely on this system. This is nothing but an impulsive, instinctive, or automatic way of thinking, without being cognizant of our thoughts and their consequences. We merely follow our senses. For instance, when we are hungry, we eat; if tired, we sleep; if we don't like certain things or people, we avoid or ignore them, and the like. This is the over-simplistic way of thinking (or not thinking) and acting upon our impulses and emotions without considering the consequences of our actions. It is critical to understand that these decisions and thoughts, because they are mostly linked with emotions, many a time could be inaccurate and not beneficial to us or others, and may even harm us! However, we do employ System 1 thinking more often, especially when we are stressed out or even just tired.

This kind of thinking (or not thinking) works great when we are physically active like driving a car, riding a bike, playing sports, or doing any kind of repetitive action (like zen doodling) but definitely not for activities that require cognitive reasoning before making decisions. In addition, because of the innate negativity biases that we are all born with, or our cognitive biases (for example, confirmation bias described below) that we acquire during our lifetime, we start looking at things either with a biased and/or with a polarised view of the world. This taints our thinking and decision-making process. System 1 thinking is most useful and the way to go; nay the only way to go, when we have to make fast decisions like saving a child

from drowning, shooting a basketball, playing an instrument while singing, and so on. At such times, we are reasonably accurate, effective, efficient, and fast.

However, in many situations, as we are responding instantly, we are prone to making sloppy errors because of our internal processes and shortcuts in our thinking and decision-making. Because of our nature of being cognitive misers, we use System 1 thinking whenever we can get away with it. This kind of automatic processing creates a major risk of creating and circulating misinformation. For example, let us deconstruct what happens when we receive a forwarded message on WhatsApp that is either favourable to our political/religious biases or detrimental to our opposition. We immediately believe it to be true because it conforms with our belief system and forward it to others to re-emphasise our biases. We do not see a need to spend time assessing its truth. It appeals to our emotions and so, we immediately forward it to everyone we know or who we think will like such information. The rapid processing in System 1 thinking, causes details to be missed. Most of the challenges that people face in the world are a result of the natural tendency of individuals to predominantly use System 1 thinking as opposed to System 2 thinking.

System 2 (Conscious and Controlled) thinking requires focus and is an energy guzzler. From an evolutionary perspective, it is newer, intentional, deliberate, calculated, rational, effortful, conscious, voluntary, controlled, less efficient, explicit, objective (fact-based), and mostly detached from emotions. This deliberate and rational thinking prevents us from accepting and spreading misinformation. But to do so, we need to consciously and deliberately think and make logical, objective, intentional, and informed decisions.

It is important to comprehend these concepts and train ourselves to make decisions using our System 2 thinking. To act on such conscious decisions, it helps to use the System 1 thinking process. It is not about choosing one process over the other, but knowing when to use which type of thinking as both are needed under different situations.

Cognitive Miserliness

The human brain is evolved to seek shortcuts to save effort in the thinking process. So humans have a tendency to solve problems in simple, easier, and faster ways rather than well thought out, deliberate, conscious, effortful ways regardless of their intelligence. This efficiency of the brain helps us to survive or exist. So, we end up using more of System 1 thinking which makes us highly efficient but also not always right. This tenet is exploited by internet trolls to trigger the emotional buttons in individuals by posting acerbic or instigating comments on social media. Malicious individuals can exploit this tendency of cognitive miserliness to sow discord by sharing false information that appeals to our emotions, prompting us to make immediate decisions about another community, individual, or nation.

Confirmation Bias

As per American Psychological Association, *confirmation bias* is the tendency to look for information that supports, rather than rejects, one's preconceptions, typically by interpreting evidence to confirm existing beliefs while rejecting or ignoring any conflicting data. *Confirmation bias suggests that we do not perceive circumstances objectively*. Once we have formed a view or an opinion which becomes a belief, we ignore and reject information that is against our beliefs. So, we selectively choose such data

and information that makes us feel good. This results in *confirming* our pre-existing prejudices or biases.

Overly anxious people tend to use confirmation bias as a way to avoid views different from their own. This is self-deception, numbing one from reality or turning a blind eye to evidence gathered from different perspectives. So, people start seeing the reality as they would like it to be, rather than as it is. We can see instances of this in the choice of our news channels or newspapers.

We are first and foremost, humans. No matter how intelligent we are, whether we are conservatives, or liberals, the gulf between system 1 and system 2 thinking, that makes us think that we are right when we are not completely right, leads to all kinds of biases. It is our innate nature to see evidence on only our side of the table as our brains have to process an overload of information for various reasons (like cognitive miserliness) and take shortcuts that are hardwired in our non-conscious mind (patterns our brain creates and stores in the subconscious mind). This is the main reason due to which we create stereotypes. The only way out is to train the mind to use System 2 thinking, to not have a biased view of people and the world. However, this requires a lot of mindful effort on a moment to moment basis.

Thus, we often only look for and find evidence that supports our pre-existing beliefs rather than look for evidence that opposes them. Even though we are prone and hardwired for confirmation bias, it is our responsibility as people (media, influencers, leaders, and others) who create, consume, and spread misinformation to overcome this bias. Even for intellectuals, it is tough to come out of these hardwired confirmation biases. For others, it is even harder because it takes even more effort to sieve out the real news from the unreal as they tend to jump to conclusions, which are generally inaccurate. Thus, we see both intellectuals and non-intellectuals prejudiced on various issues (political, social, communal, and so on). *We are not always as objective as we think ourselves to be.* Therefore, confirmation bias is considered the mother of all biases. We are the prisoners of our assumptions and belief systems.

The media in its inciteful ways to sensationalise and garner TRP amongst its target demographics, enhances these pre-existing biases by collecting data through surveys (typically using yes/no answers) that are designed to yield 'yes' if their favoured notion was true and ignore alternative ideas that are likely to give the same result. Thus, media promotes users to be in '*echo chambers*', limiting their exposure to diverse perspectives. In the interest of their commercial gains, most mainstream media tend to use these biases and perpetuate the same in society.

Confirmation bias affects individuals, families, and the entire world, as it consistently shapes the way we look for information and the way we interpret them. It impacts our objective decision-making process.

Cognitive Dissonance

Lack of harmony in what we believe as ideals and how we act is the simplest way of looking at cognitive dissonance. In other words, whenever we act contrary to our ideals, we experience cognitive dissonance. It results in feelings of uneasiness, discomfort, stress, anxiety, or mental conflict. However, when unresolved, persistent, contradictory concepts have ethical implications and can cause ethical or moral dissonance. Unfortunately, many people attempt to resolve these without doing the right thing. They resort to rationalisation, giving excuses, or not speaking the complete truth. Some of the usual rationalisations people give to themselves are as follows:

1. I am doing this only because I have been told to do so (for example, give wrong information to customers). Hence, it is someone else's fault.
2. I will give them a reason (excuse) that may or may not be completely true.
3. Everyone does it.
4. It is not a big deal.
5. Remain innocently ignorant rather than being intentionally dishonest.
6. These things happen.
7. Oh, it is not illegal.
8. It is only a white lie.
9. No one will come to know.

As a result of the disharmony, when our conduct clashes with our beliefs, slowly but surely, our beliefs swing into conformity with our conduct in insidious ways, since we don't realise what is going on. When these rationalisations become the norm and a habit, we start to see our wrongdoings as acceptable. This way the brain weaves a story to us about ourselves because everyone wants to feel like he has made good decisions all the time. But that cannot happen as we are bound to make mistakes. That is called being human. But recognising these biases in ourselves (increased self-awareness) and trying not to rationalise and not take shortcuts is the way to go, which once again takes a lot of conscious effort. Cognitive dissonance when addressed properly helps in our decision-making and also develops greater self-awareness which is one of the most important faculties that only human beings possess.

Conclusion

An objective analysis helps us to identify three stages at which information overload can be tackled while ensuring that proper and beneficial information is promoted and misinformation is actively prevented.

1. Individual level (Consumers and people who generate the information).
2. Societal, community, national, and cross-national level.
3. Guidelines and regulatory level.

Of these three, this article focuses on the interventions and methodologies at an individual level.

Individual level: Only by using the resources that are within us (self-awareness, discerning power, willpower), we would have the potential to tackle this issue individually.

To discern the difference between what is real and unreal regarding information generated and spread over the media, all we need to do is to use these simple rules:

1. Is this information necessary (or relevant) for me to consume and/or spread?
2. If necessary (or relevant), am I an expert to decide on the genuineness of this information?
3. If I am not an expert, can I find out its degree of genuineness?
4. If this information is genuine, is it beneficial to those I would forward it to?

With these rules, at least at the consumers' level, a lot of information gets filtered out. Most of us without even answering the first question, jump to conclusions and communicate without thinking. The reasons, as discussed earlier, are our cognitive miserliness and laziness, leading to System 1 thinking (thinking through our emotions rather than understanding them through cognition), which leads to many cognitive biases including conformation bias and cognitive dissonance. As consumers and generators of information, we need to come out of this pattern. This is how we can master our discerning ability, rather than becoming puppets to be used by somebody else through technology for fulfilling their malicious intents.

Even though digital technology has reached astronomical proportions, it is still nascent in its ability to detect and weed out malicious actors and fake data. If we use our biological intelligence to master and train the non-biological (artificial) intelligence, then we can, as a species, utilise digital technology not just for a favoured few but for the greater good of humanity. When this happens, we move towards building an experiential wisdom based society rather than an information-laden society. *In an information-based society, importance is given to what to know and how to know, while in a wisdom-based society, prominence is given to why we should know, what we ought to know.*

In the broadest sense, digital technology and non-biological intelligence are forcing us to truly understand ourselves and have compelled us to look at the meaning and purpose of life both at an individual level and at the level of humanity.

The technological advances such as Artificial Intelligence (and the spread of fake news) beyond the mental capacities equivalent to or beyond those of humans by emulating the human brain, raises a question amongst the common people whether human brains have the capacity and capability to discern real information from the unreal or misinformation. The answer to this is an affirmative, unequivocal YES. This can be achieved through cognitive effort, by exercising our free will and discerning power, to figure out what relevant information is needed for one's growth, success, and peace of mind, or even better, for developing a beautiful mind. This cognitive effort results in our mind developing both the 'will' power and 'won't' power. More importantly, by developing deepened self-awareness, which represents both cognitive and emotional intelligence, we can use it for the greater good to yield a sustainable, progressive world not only for ourselves but also for future generations.

So even though the proliferation of misinformation or disinformation is a global issue, the solution has to start from an individual level. *This is the way to become evolved beings at an individual level and move towards building experiential wisdom-based societies*.

This wisdom-based world of systems involves a new kind of mindset—an Evolving Mindset, that takes into account the new meaning for using information/knowledge (especially of Artificial Intelligence, AI) and the new purpose for learning this knowledge. Disinformation and misinformation work diametrically opposite to what is necessary for building a wisdom-based society. When and only when we go beyond the partisan issue of any nation and beyond political, fanatic religious and national boundaries to a truly global level and use interdisciplinary fields like science, creative arts, humanities, law, and business, will we be able to tackle this *infodemic* of the digital age.

Due to the fast and furious spread of misinformation, it is crucial and imperative for each individual to develop an evolving mindset, using their discerning power, willpower, and free will to distinguish the real from the unreal news and be responsible as global citizens of the world.

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Emotions of the Conscience of India

Analysis of the Complete Works of Swami Vivekananda

Cdr (Retd) P G Bhat

'Every thought was passion, every word was faith.'—Romain Rolland, *The Life of Vivekananda.*

Introduction

THE ADVAITA ASHRAMA website[1] has published the *Complete Works of Swami Vivekananda* in nine volumes—the corpus we study. We classify and analyse the writings using NLP—Natural Language Processing (not Neuro-Linguistic Programming). The findings could help further focused studies using NLP as well as manually.

NLP is a branch of computer science that tries to understand the text the way human beings do. It is the rule-based modelling of human language with statistical and machine learning models. Computer science, artificial intelligence and cognitive logic try to teach machines to read and understand human language for decision making.

We segregate the text into individual pieces of writings and measure their readability and emotional content. We plot the sizes and the qualitative factors of the text against a timeline.

To quantify various features of the data and to visualise the results, the author has developed computer programs using the Natural Language Tool Kit (NLTK) and Pandas (a data analysis module for the Python programming language).

In a strictly rule-based computation, the software can significantly simplify some tasks. For example, a six lines program finds all the 12 occurrences of 'Prabuddha Bharata' in 4,483 pages of text in 60 nanoseconds. Finding a pin in a haystack is easier using an X-Ray than a search with a magnifying glass.

However, where the rules are fuzzy, interpretation is subjective, and the outcome is a probability, we need more complex software. Also, the interpretation of the result may still be inferior to human cognition.

After retiring from the Indian Navy, Cdr P G Bhat worked in the software industry for about 15 years. He now uses software technology for social good and is a guest faculty at a few reputed institutes.

Category	Original Language		Word Count
	Bengali	English	
By Swami Vivekananda			
Letters	145	616	1,27,110
Talks, Dialogues, Discussions, and Discourses	17	259	2,80,030
Writings—Proses and Poems	10	79	85,948
Karma Yoga, Raja Yoga, Jnana Yoga, and Bhakti Yoga	0	49	82,308
Related to Devotion	0	11	7,599
Collections of Sayings	0	3	8,676
By Others			
News Reports in India and Abroad	0	119	31,516
Sister Nivedita	0	14	9,413
Notes by the Publisher	1	21	18,401

Table 1: Corpus Data of the Complete Works of Swami Vivekananda

Category	Average Word Counts	
	Translated	English
Letters	237	150
Talks, Dialogues, Discussions, and Discourses	1,381	990
Writings—Proses and Poems	2,771	737
Karma Yoga, Raja Yoga, Jnana Yoga, and Bhakti Yoga	—	1,680
Related to Devotion	—	690

Table 2 : Lengths of Texts

The current NLP based work looks at the writings like a naïve reader unaware of the context. They are non-judgemental. Using the power of NLP, we can dig deeper and expect the observations to be a little closer to those of a well-informed reader.

The Corpus

Here is an analyis of the most prominent words of Swami Vivekananda, found in his *Complete Works*.

None living today has seen Swami Vivekananda in flesh and blood. Nevertheless, his words continue to positively influence and even transform thousands around the world. We read him with NLP's eyes and attempt to understand the power of his writings from a machine's point of view. The result is a description of data—'what is' and 'what we've measured' analytics.

Note: The appendix has notes on the simple graphs in the article.

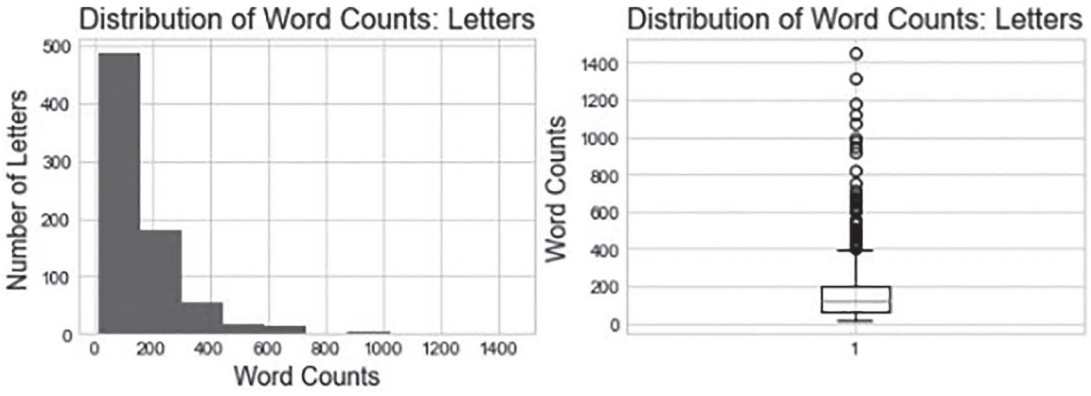


Figure 1

We organise the contents of the *Complete Works of Swami Vivekananda*[1] into nine categories and segregate pieces in each of them. The result is 1,344 pieces of writings as detailed in Table 1 (page 135).

We assign a category, timeline, original language, audience/addressee, and the length of the text to each piece of writing. We measure the readability and emotional contents of the pieces of text and look for correlations with the structural factors.

Comparing the average length of pieces across categories is not meaningful because their contexts differ. In addition, the lengths of writings in categories other than letters largely vary. Letters are personal and hence the audience is well defined. When familiar to the writer, which is mostly the case, letters allow informal styles and flow of feelings and emotions. They are mostly short, written in a single sitting, and include the date of writing.

The histogram in figure 1 (left side) above shows the frequency distribution of letters with different word counts. The boxplot (right side) shows that the range of letter length is 20 to 400 words with some exceptions (outliers). Fifty-three of the 761 letters are longer than 400 words and five of them are longer than 1,000 words. Swami Ramakrishnananda received the longest letter. Shri Alasinga

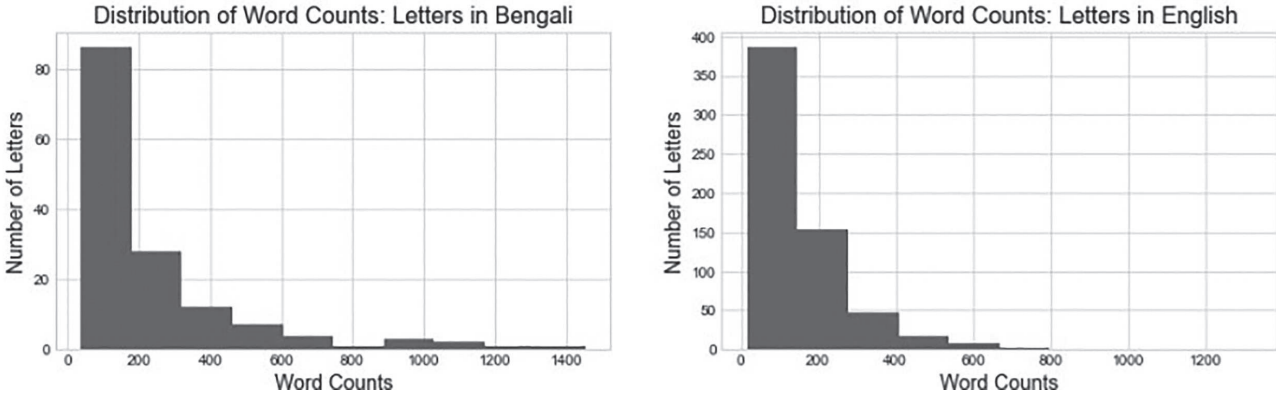

Distribution of Word Counts: Letters in Bengali
Number of Letters
Word Counts
Distribution of Word Counts: Letters in English
Number of Letters
Word Counts

Figure 2

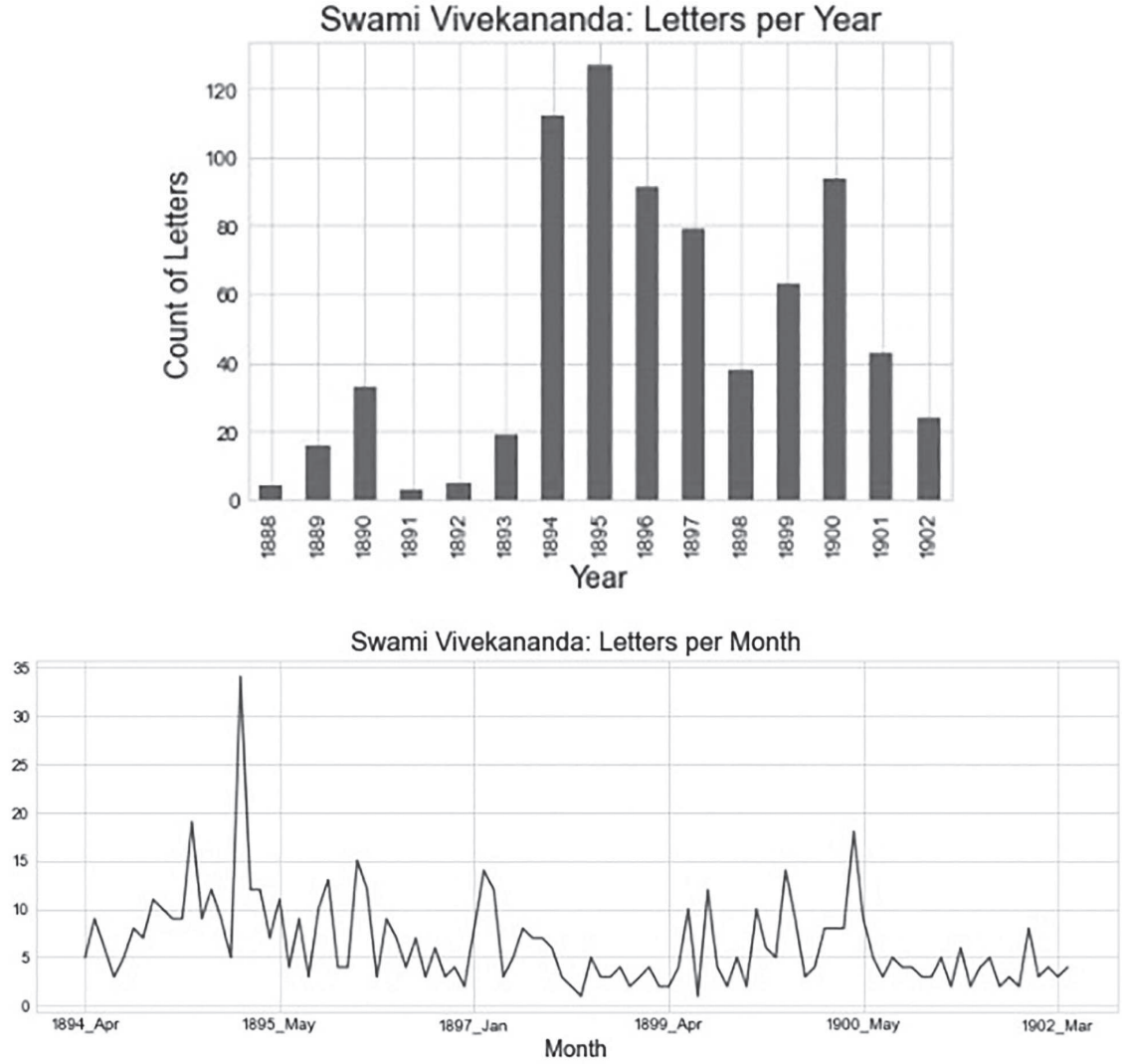


Figure 3

Perumal and Mr Manmatha Nath Bhattacharya also received letters with more than 1,000 words each.

Length of Letters Written in English and those Translated to English

The charts in figure 2 (page 136) compare the frequency distribution of letters based on their lengths. The left chart is for the letters translated to English from Bengali and the right is for those written in English.

In his mother tongue, Swami Vivekananda wrote longer letters and talked more! Were the Bengali letters longer or did the translators make them longer, perhaps to clarify the contents to the readers?

Frequency of the Letters

The bar chart in figure 3 (above) shows the number of letters Swami Vivekananda wrote each year. The frequency was low until 1894, peaked

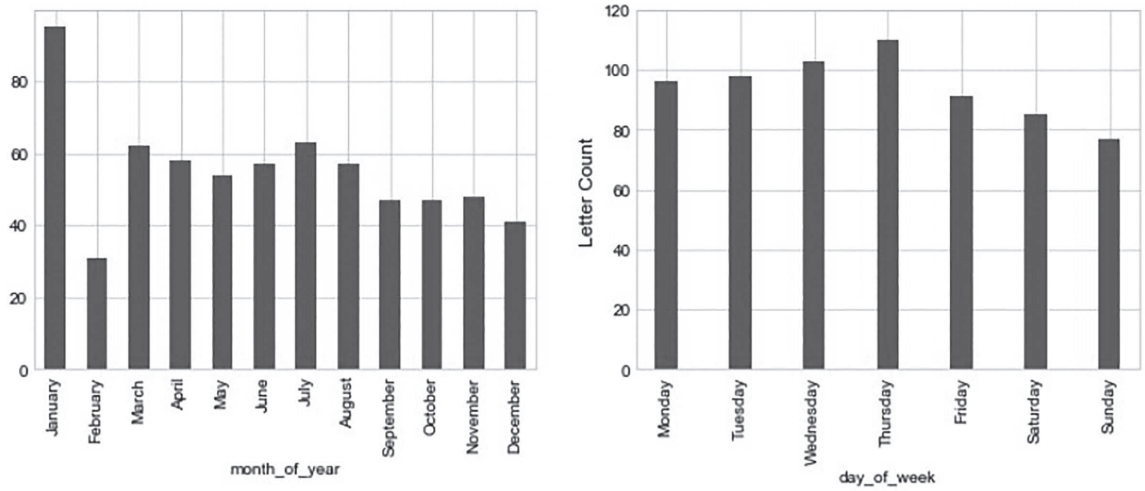


Figure 4: Monthly and Weekly Number of Letters

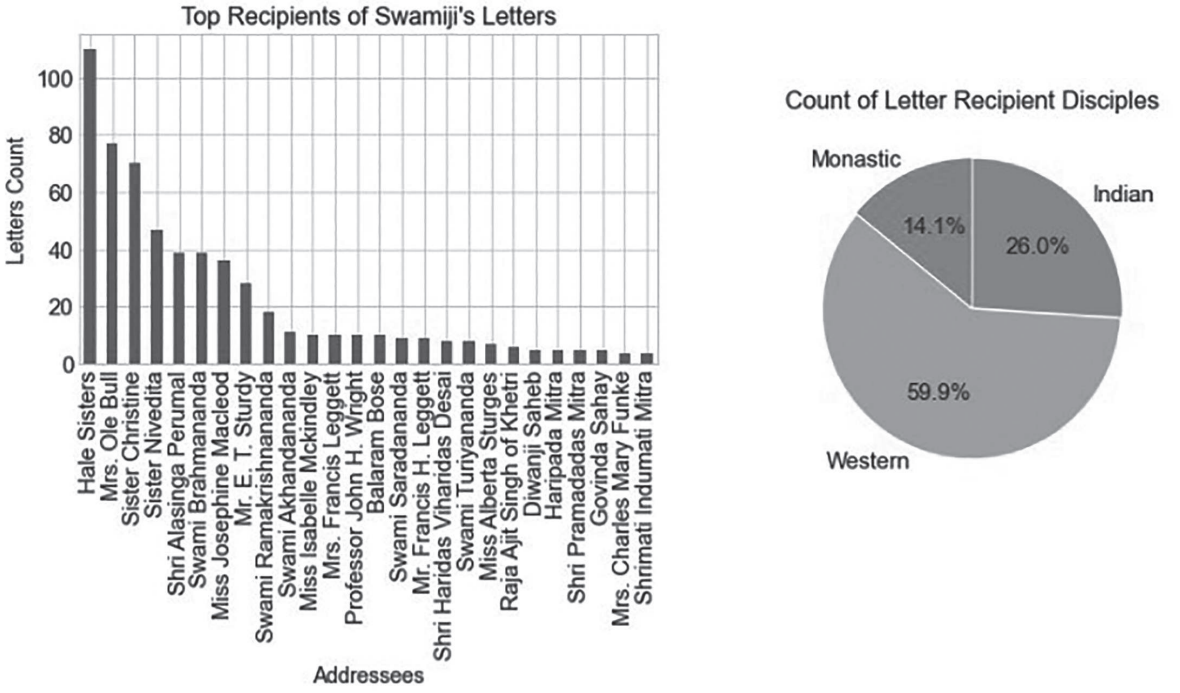


Figure 5: Recipients of Swamiji's Letters

in 1895, then declined during the next 3 years, rose again between 1899–1900 before declining again. The plot at the bottom shows the number of letters per month (for the period since 1894) depicting the cyclic pattern. The bar chart in the figure 4 shows monthly and weekly number of

letters. Swami Vivekananda wrote more letters in January and on Thursdays!

Recipients of Letters

The bar chart in figure 5 (left) shows the counts of letters received by the top recipients (page 138).

As the pie chart depicts (figure 5, right), about 60% of the addressees are the Western disciples of Swami Vivekananda, 14% his monastic brothers and the remaining are householder disciples.[2]

In 485 letters, Swami Vivekananda greeted the recipients with 'Dear' mostly followed by the name of the recipient without titles like Mr, Mrs, Dr, etc. He greets a few as Dear Madam, Dear Sir, Dear Doctor, and the like. In 23 cases, greetings like Beloved, Blessed, Revered, Respected, Honoured, and Your Highness are used. The same person is greeted differently on different occasions. For example, Balaram Bose is addressed differently as 'Dear Sir', 'Revered Sir', 'Respected Sir', and 'My Dear Sir'.

Sentiment Analysis

Sentiment Analysis computationally determines if a piece of writing conveys positive, negative or neutral sentiments. VADER (Valence Aware Dictionary and Sentiment Reasoner)[3] is a rule-based sentiment analysis tool that gives four scores:

(i) The Compound score, the sum of all the lexicon ratings, normalized between -1 and +1.

(ii) Positive sentiment.

(iii) Neutral sentiment.

(iv) Negative sentiment.

We have calculated the sentiment scores for each piece of writings in the corpus.

Emotion Analysis

National Research Council Canada (NRC) has created an emotion lexicon.[4] It is a set of 14,180 words manually tagged for the presence or absence (1 or 0) of ten emotions. The tagged emotions are anger, fear, anticipation, trust, surprise, sadness, joy, disgust, negative, and positive.

We have taken the weighted average values of emotional scores (normalised for the differences in the length of documents) for each piece of writing in the corpus.

Sentiment Analysis vs. Emotion Analysis

A sentiment score is for a set of words or a full document. The score considers the context and the semantic orientation.

Emotion scores from NRC indicate presence or absence (1 or 0) of each of the ten emotions for the words. E.g., the words 'feeling' and 'treat' get a score of one for each of the 10 emotions. 7,713 words (54%) have no emotional content, making them neutral words.

Though the emotion score seems to be misleading when we check a few words, aggregating the scores in a larger text gives valuable information. Emotion scores indicate the expressiveness of the text and sentiment scores (polarity/compound scores) measure the overall sentiments in a document.

Text	Sentiment Score	Emotion Score
Bad	{'neg': 1.0, 'neu': 0.0, 'pos': 0.0, 'compound': -0.5423}	NRC set does not include the word 'not'. Emotion score for the two texts would be equal.
Not Bad	{'neg': 0.0, 'neu': 0.26, 'pos': 0.74, 'compound': 0.431}	

Table 3: An Example of Sentiment Score and Emotional Score

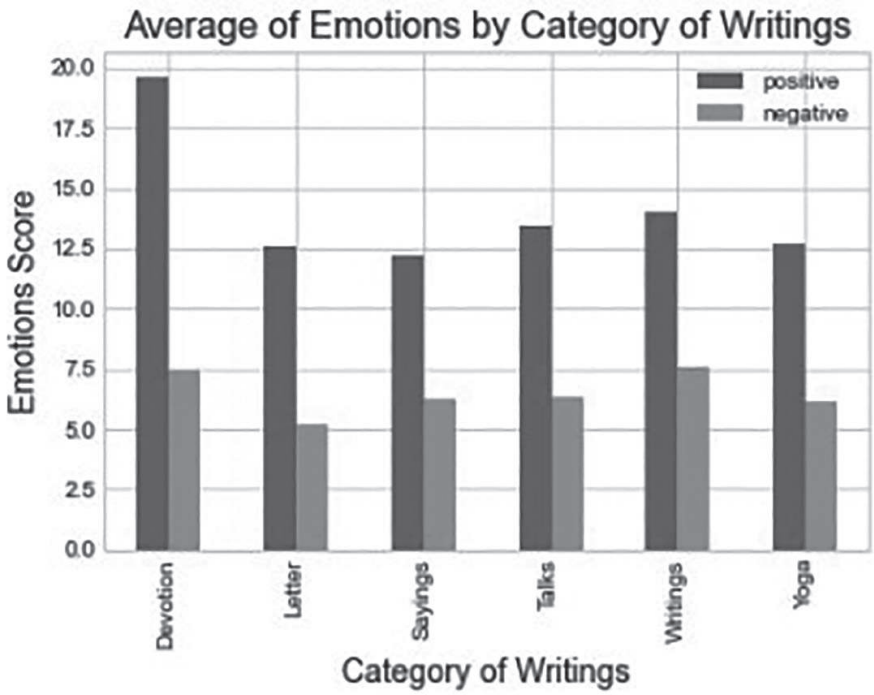


Figure 6: Emotion Scores in Swamiji's Writings

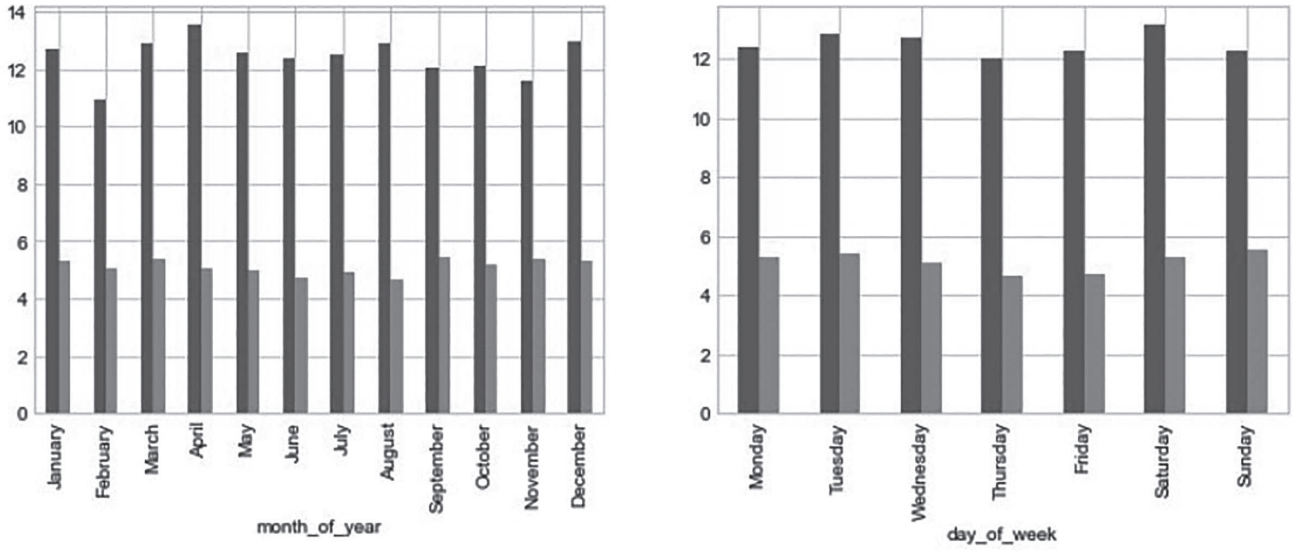


Figure 7: Timeline of the Average Emotional Content in the Letters

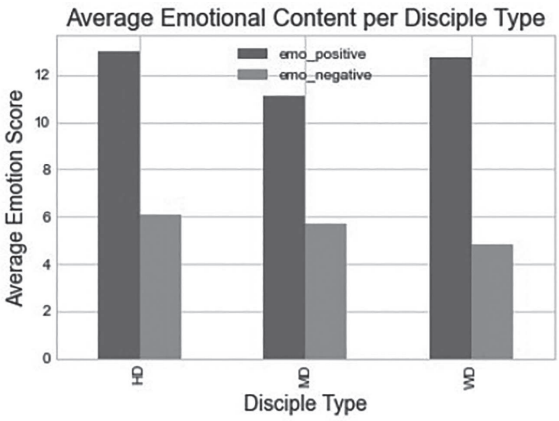


Figure 8

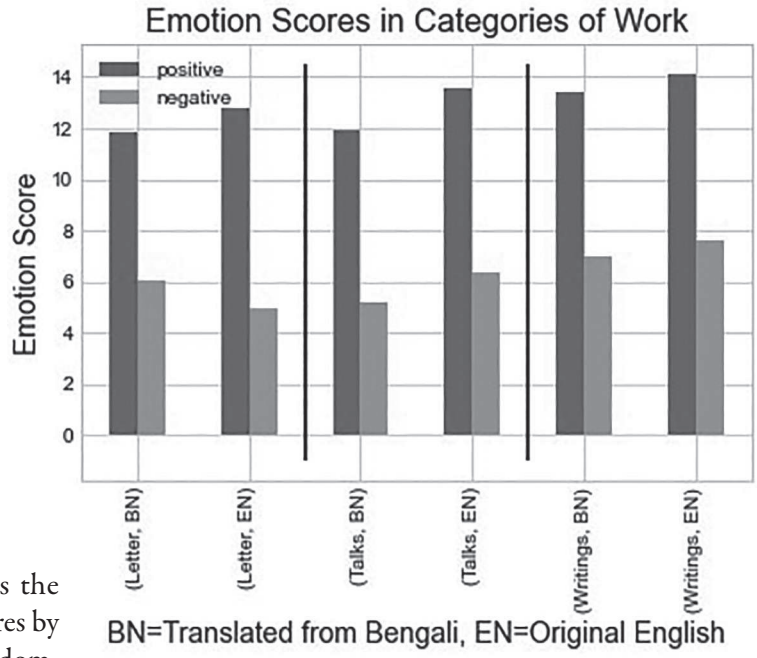


Figure 9

Emotion Scores

The chart in figure 6 (page 140) shows the average positive and negative emotion scores by the category of writings. Positive emotions dominate all the writings. The writings related to devotion convey the highest positive emotions.

Positive as well as negative emotions increase and reduce together. They have an insignificant (0.012) positive correlation. We can thus say that a piece of writing is more or less expressive based on the sentiment scores.

In addition, the average emotional contents in the letters, seen against the timeline, are cyclic to a small extent (figure 7, page 140).

Average emotional contents are the lowest in the letters to Monastic Disciples (MD), highest in the ones written to Householder Disciples and Devotees (HD), and between the two for Western Disciples (WD) (figure 8).

Translatability

Certain concepts and words are so interrelated with language and culture that their accurate translation could be difficult even for the writer. A perfect translation is probably impossible albeit some translated works could be rated even better than the original.

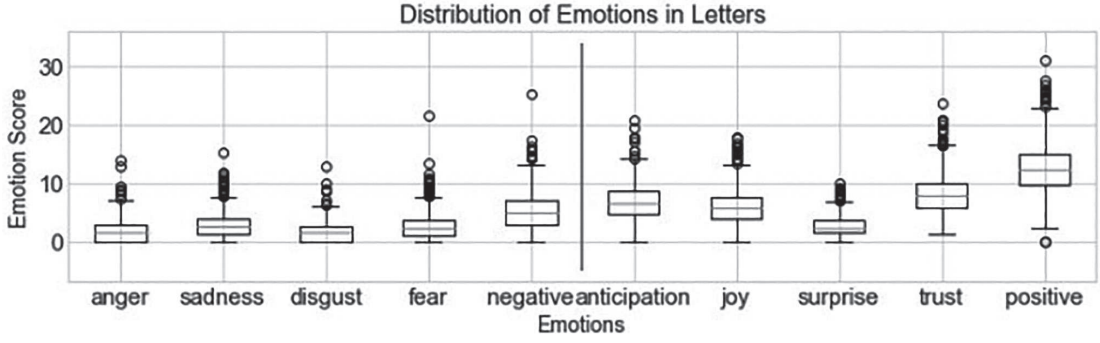


Figure 10

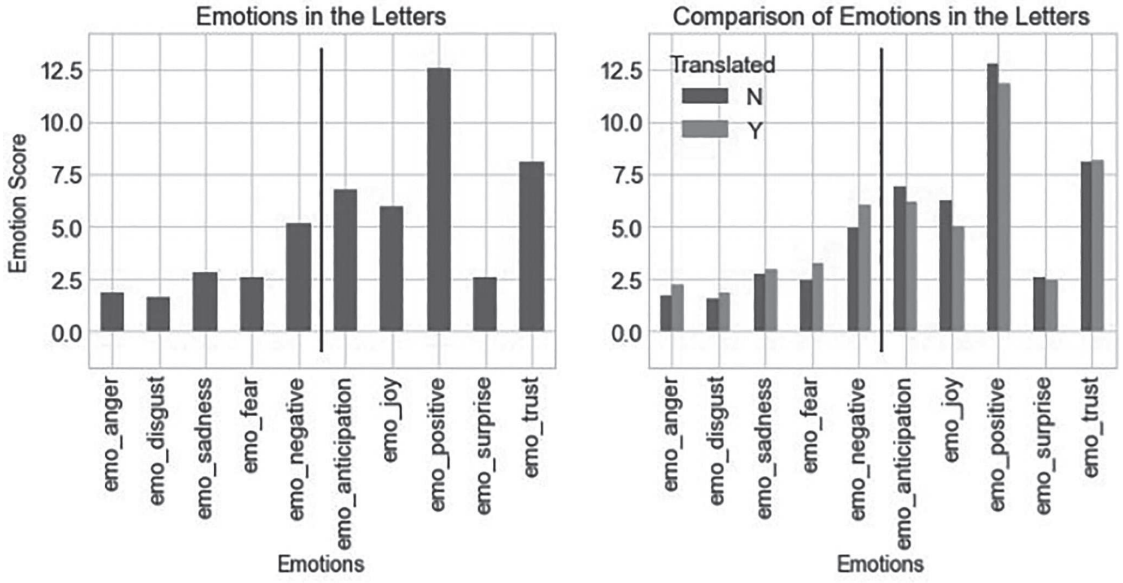


Figure 11

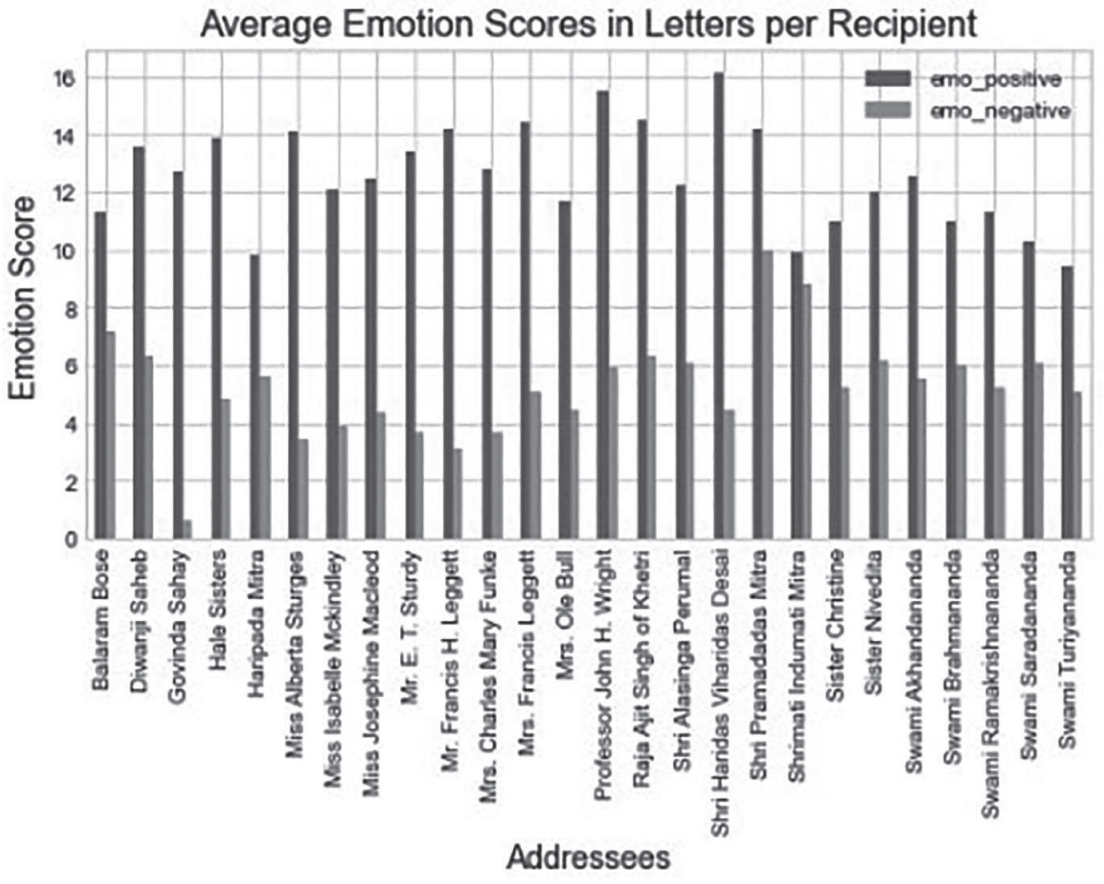


Figure 12

24% of the letters, 13% of the proses and poems, and 7% of the transcripts of talks and discourses in the corpus are translations from Bengali. We compare the average emotions in the English and the original Bengali versions.

The letters written in English have more positive and less negative emotional content than the ones translated from Bengali. Talks and writings in English have more emotional content than the ones translated from Bengali. However, the difference seems negligible (figure 9, page 141).

Emotions in Letters

So far, we visualised only the positive and negative emotion scores. The box plot in figure-10 shows the distribution of the 10 emotional contents.

The bar chart in figure 11 (page 142) shows the average emotion scores in the letters. The one on the right compares the emotions in letters written in English and those translated. Letters written in Bengali have higher negative and lower positive emotional content than the ones written in English. However, the differences are insignificant.

Figure 12 (page 142) shows the average positive and negative emotional content in the letters to top addressees. It probably shows Swami Vivekananda's comfort with each recipient in exposing his emotions. Exploration could reveal the topics and the letters' context, which can change the perspective.

Emotions against Timeline

Figure 13 (below) shows the positive and negative emotions in the letters against the timeline. As the frequency of letters was low until 1894, the plot has emotion scores from 1894 onwards.

Figure 14 (page 144) shows the compound sentiments for individual letters. The values range from -1 to +1. The polarity is positive if the Compound Sentiment is >= 0.5 and negative if it is <= -0.5. Of the 761 letters, 704 have positive sentiments, 31 are neutral and 26 have negative sentiments. In its distribution, compound sentiment values below 0.83 are exceptions (outliers) showing the high positive polarity of the sentiments.

The letter below has the maximum negative emotions. Scores for some negative emotions are—anger: 13.94, sadness: 15.21 fear: 21.54.

San Francisco,
4th March, 1900.

Dear Nivedita,

I don't want to work. I want to be quiet and

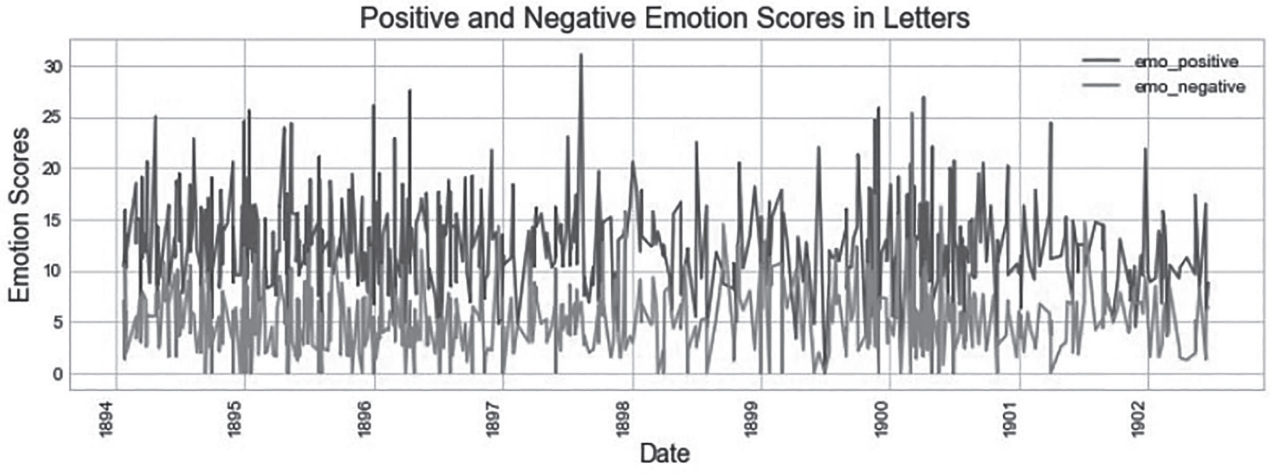


Figure 13

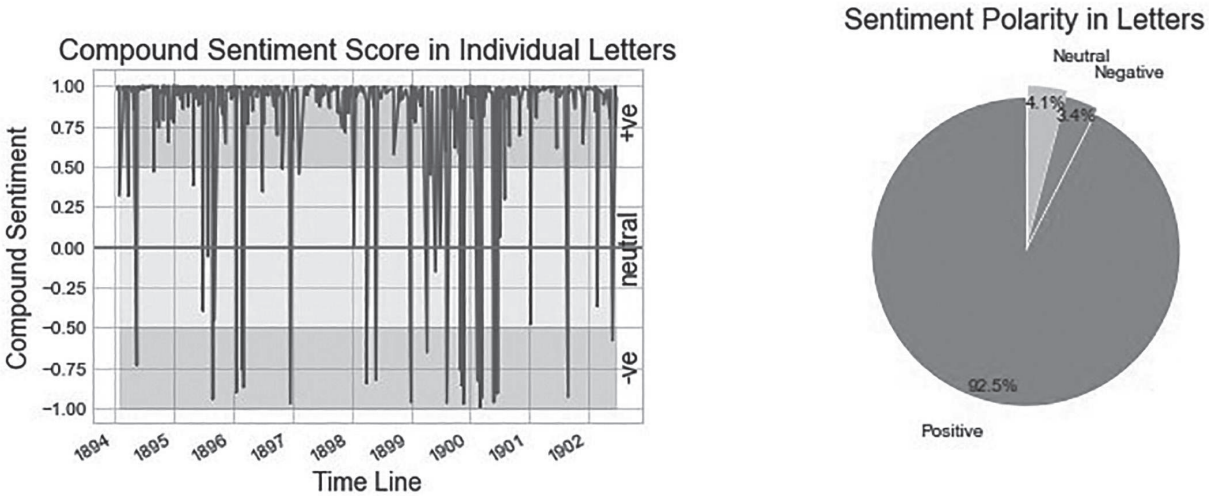


Figure 14

rest. I know the time and the place; but the fate or Karma, I think, drives me on — work, work. We are like cattle driven to the slaughter-house — hastily nibbling a bite of grass on the roadside as they are driven along under the whip. And all this is our work, our fear — fear, the beginning of misery, of disease, etc. By being nervous and fearful we injure others, by being so fearful to hurt we hurt more. By trying so much to avoid evil we fall into its jaws. What a mass of namby-pamby nonsense we create round ourselves!! It does us no good, it leads us on to the very thing we try to avoid — misery. ...

Oh, to become fearless, to be daring, to be careless of everything! . . .

Yours etc.,
Vivekananda.

The letter below has the maximum positive emotions and hardly any negative emotions.

The Math, Belur,
11th August, 1897.

Dear Joe, (Miss MacLeod.)

. . . Well, the work of the Mother will not suffer; because it has been built and up to date maintained upon truth, sincerity, and purity. Absolute sincerity has been its watchword.

Yours with all love,
Vivekananda.

Readability

A good readability score shows that the readers would easily understand the content.

While several readability tests are in use, Flesch-Kincaid Readability Test[5] is probably the most popular. It gives a score based on the average length of sentences and the average number of syllables per word.

Following is the formula:

$$206.835 - 1.015\left(\frac{\text{total words}}{\text{total sentences}}\right) - 84.6\left(\frac{\text{total syllables}}{\text{total words}}\right)$$

The readability index of Reader's Digest is 65.

(See Appendix to interpret the readability scores.)

Because poems generally use different punctuation and format, the average word count per sentence increases. Some poems show very low, even negative readability scores though they are easy to understand. Readability scores for poems are misleading.

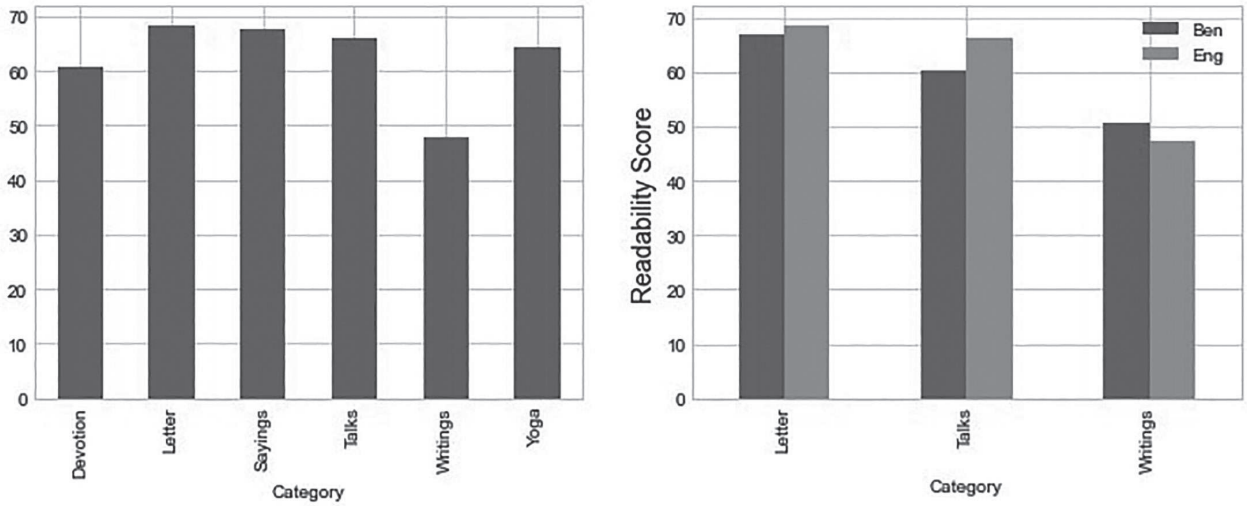


Figure 15: Average Readability Scores

The chart on the left in figure 15 shows average readability scores by category. The 'writings' category excludes poems. The chart on the right compares the average readability of the translated texts with the ones originally written in English.

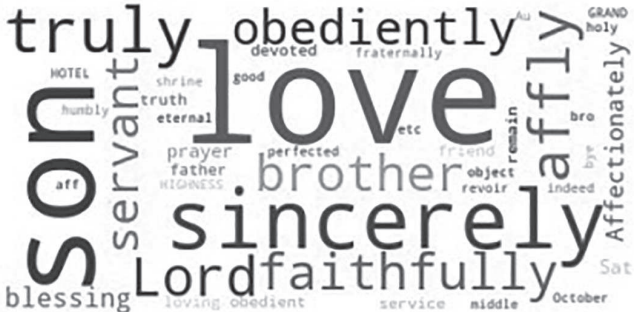
Translated	Letter Count	Readability		
		Min.	Max.	Avg.
No	616	-17	95	69
Yes	145	35	85	68

Table 4: Readability of Complete Works

Letters and talks written in English are marginally more readable than the translations. Translated prose has a little higher readability than the ones written in English. However, this is a comparison of two unequal sizes of data sets.

Further investigations can help in understanding the reason. Sample manual comparison would be the first step in that task.

Swami Vivekananda signs off his letters with love, affection, and humility.



Conclusion

Rabindranath Tagore said: 'If you want to know India, study Vivekananda. In him, there is everything positive and nothing negative.' And, millions have studied him for the past ten dozen years. We do not need a computer to testify that his writings are easy to read and brim with positive sentiments. The software adds value by quantifying these factors, comparing different categories of writings, and showing them against a timeline.

The analysis has not considered the context and possibly correlated events. We can expand the software and extend the scope of analysis.

Vivekananda Rock Memorial, Kanyakumari

However, only a sentient can sense the multiple layers of meaning in these great writings. Software tools can aid such efforts.

Our preliminary analysis identifies some further work:

1. Blend the power of human reasoning and the capabilities of software technology to widen the scope and depth of such analyses.

2. Compare sample writings of Swami Vivekananda in Bengali and their translations. Identify possible reasons for the marginal differences in the average length and expressiveness.

3. Look for possible effects of other events on the emotional contents in the writings.

4. Correlate the topics of the writings and emotional contents.

5. Analyse coherence and seeming contradictions, if any, in the writings.

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1. <http://ramakrishnavivekananda.info/vivekananda/complete_works.htm>.
2. <http://ramakrishnavivekananda.info/vivekananda/appendices/appendices_contents.htm>.
3. See <https://github.com/cjhutto/vaderSentiment>.
4. See <https://github.com/sebastianruder/emotion_proposition_store/tree/master/NRC-Emotion-Lexicon-v0.92>.
5. <https://en.wikipedia.org/wiki/Flesch%E2%80%93Kincaid_readability_tests>.

Appendix

I. Notes on Charts

Word Cloud: A kind of 'weighted list' that shows the frequently occurring words in a document. The font size of a word is proportional to its frequency in the document.

Pie Chart: It is a circular statistical graphic divided into slices to illustrate numerical proportion. The arc length of each slice (consequently its central angle and area), is proportional to the quantity it represents.

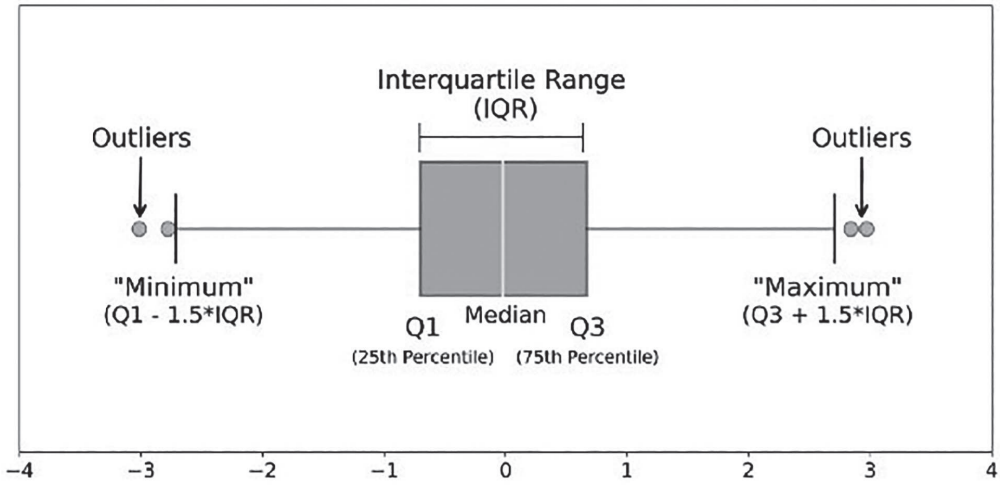
Line Plot: A line Plot is a basic type of chart common in many fields. It displays information as a series of data points connected by straight-line segments.

Bar Chart: A bar chart presents categorical data with rectangular bars with heights proportional to the values they represent. It shows comparisons among discrete categories. The X-axis shows the categories being compared, and the Y-axis represents a measured value.

Histogram: Histograms, a special case of bar charts, demonstrate how many of a certain type of variable occurs within a specific range. For example, we use histograms to show the count of documents with different word counts.

Box Plot: A boxplot is a standardized way of displaying the distribution of data based on a five-number summary ('minimum', first quartile

IMAGE: HTTPS://TWITTER.COM/RASHTRAPATIBHVN



(Q1), median, third quartile (Q3), and 'maximum'). It can tell what their values are and about the outliers. It also shows if the data is symmetrical, how tightly grouped, and if and how the data is skewed.

Terms in Boxplot:

1. Median (Q2/50th Percentile): the middle value of the dataset.
2. The first quartile (Q1/25th Percentile): the middle number between the smallest number and the median of the dataset.
3. Third quartile (Q3/75th Percentile): the middle value between the median and the highest value of the dataset.
4. Interquartile range (IQR): 25th to the 75th percentile.
5. 'maximum': Q3 + 1.5*IQR
6. 'minimum': Q1 -1.5*IQR
7. Whiskers: distances between maximum and Q3; and between minimum and Q1
8. Outliers: values outside the minimum and maximum limits. For a normal distribution, 7% of the values would be outliers.

II. Readability Index

Score	School Level (US)	Notes
100–90	5th grade	Understood by an 11-year-old student.
90–80	6th grade	Conversational English for consumers.
80–70	7th grade	Easy to read.
70–60	8th and 9th grades	Plain English. Understood by 13- to 15-year-old students.
60–50	10th to 12th grades	Fairly difficult to read.
50–30	College	Difficult to read.
30–10	College Graduate	Very difficult to read.
10–0	Professional	Extremely difficult to read.

III. **Lexicon**: The complete set of meaningful units in a language.

Rejuvenating India's Glory with 4.0 Technologies

Kavya Dommeti

We are in the midst of the Fourth Industrial Revolution. India now has a golden opportunity to make the 21st Century, India's century as envisioned by Swami Vivekananda. What should be our approach to make it happen?

Technology and Digital Revolution

Technology enables human advancement. In every area of human life, we have come a long way because technology has impacted it in a certain way. Let us go back a few centuries and see the progress of the human race. It is not difficult to observe that the speed and the number of advancements per decade have been on a steady rise.

Fire and farming are our early revolutionary discoveries that paved the path for civilisations. Then, we gradually evolved with breakthroughs every now and then in various domains. But, a steep change occurred only in the last three centuries with a series of technologies, broadly classified into revolutions.

They are termed industrial revolutions. Because of the impact of these, previous technology advancements were found to be more profound in the manufacturing industries. Yet, the technologies that triggered each revolution changed many aspects of our lives—Steam Engines, Electricity, Internet—encompassing more and more aspects with each succeeding revolution.

Currently, we are in the midst of the fourth Industrial Revolution. It is characterised by

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IMAGE: HTTPS://WWW.ESSENTRACOMPONENTS.COM

the convergence of cyber and physical systems. Transformative technologies such as Artificial Intelligence, Cyber Security, Machine Learning, Data Science, IoT, AR/VR, and Blockchain are some of the 4.0 technologies.

This new wave of technologies is rapidly changing the landscape of 21st-century businesses in every sector across the globe. At the same time, these 4.0 technologies are creating tremendous opportunities.

Industrial Revolutions and Shift of Global Power

With each industrial revolution, the global economic, financial, and political power shifted to countries that were rapidly adapting to these changes. The first industrial revolution gave rise to what is sometimes called '*The Great Divergence*'. It is no coincidence that Great Britain, the first industrial nation, came to control fully a quarter of the world's population and landmass by the end of the 19th century.[1]

The second industrial revolution gave way for Germany to grow in power. With the growth of its industries, and its comparative advantage in military-relevant heavy industry, in particular, Germany became as capable as any European power.[2] When the internet era ushered in, we can say without any dispute that the USA stood high in the ranks with its continued innovations and enterprises.

Today, in the fourth industrial revolution, we are experiencing a never-before cascade of new technologies, new innovations, new opportunities, and new industries opening up right before our eyes. 4.0 technologies are going to add trillions of dollars to the global economy. For instance, AI alone has the potential to deliver additional global economic activity of around $13 trillion (~ 9 Crore Crores) by 2030.

The race for leadership in the next wave of technological revolution is reason enough to understand that countries across the world are acknowledging and jumping on the 4.0 bandwagon. Prominent corporations across the globe are investing heavily in building the skilled force necessary to secure a grip on the fast-evolving 4.0 technology landscape. Here is a glimpse of a few:

- $700 mn: Amazon to train 1,00,000 employees in high-demand areas like cloud computing, machine learning.[3]
- $1 bn: AT&T is re-training nearly half its workforce for jobs of the future.[4]
- $200 mn: Accenture commits to Upskilling for the digital age.[5]
- $350 mn: J P Morgan Chase Global investment in the future of work.[6]

Many companies are gearing up along the same lines to make themselves ready for the 4.0 revolution. According to US Chambers, employers invest more than $486 billion annually on training, overwhelmingly focused on upgrading the skills of their existing employees.[7]

For better or worse, the world is always changing. One non-negotiable truth is that only those countries or regions that adapt to these changes have flourished and thrived. This wisdom rings true in the words of Swami Vivekananda who placed great trust on India regaining its past glory.

Swami Vivekananda's Vision for India

Swamiji had tremendous faith in the youth of the country. He knew that by unleashing the energy of Indian youth, India can realise its true potential. He considered them as the greatest asset, the wealth of India. He believed that they were full of energy, idealism, enthusiasm, hope, optimism, and adventurous spirit.

More specifically, he mentioned the need to adapt to the changes that Western civilisation

is ushering in. This applies well to the technological shifts in today's world. He saw the potential of India's rise with the right knowledge and skills necessary for this technological shift. Swamiji says:

> The tidal wave of Western Civilisation is now rushing over the length and breadth of the country. It won't do now simply to sit in meditation on mountain tops without realising in the least its usefulness. Now is wanted—as said by the Lord in the Gita—intense Karma-yoga, with unbounded courage and indomitable strength in the heart. Then only will the people of the country be roused.[8]

Swamiji also pointed out the importance of adapting and creating opportunities out of the changes that the technological revolution is bringing to the world. The path that he directed is along the lines of work and action. He says:

> Come, be men! Come out of your narrow holes and have a look abroad. See how nations are on the march! ... Do you love your country? Then come, let us struggle for higher and better things; look not back, no, not even if you see the dearest and nearest cry. Look not back, but forward![9]

Fourth Industrial Revolution—An Incredible Opportunity for India

Today, India is one of the youngest nations in the world with more than 62% of its population in the working-age group (15–59 years), and more than 54% of its total population below 25 years of age.[10]

This uniquely places India in a critical double-edged sword situation. India's demographic dividend can put India among the global leaders when it is properly harnessed. On the other hand, this can also turn into a demographic disaster in case an unskilled, under-utilised, and frustrated young population undermines social harmony and economic growth.

UNICEF 2019 reports that at least 47% of Indian youth are not on track to have the education and skills necessary for employment in 2030.[11] If we want to ensure a bright future for India, we first need to strengthen and empower our youth.

Indian minds have already proved their prowess for IT when India raced against time to solve the Y2K problem and saved the world from an economic catastrophe. Across the world, India is known for its strength in IT.

During the 3rd Industrial revolution, India was almost a decade late to adapt to IT. Still, we are reaping huge benefits. As of 2020, India's IT workforce accounts for 4.36 million employees, bringing prosperity to many families and to the country.[12] The sector has increased its contribution to India's GDP from 1.2% in 1998 to 7.7% in 2017.[13] Though we made good progress, India hasn't realised its maximum potential yet.

Industry 4.0 is a bigger opportunity. The new wave of technologies such as Artificial Intelligence (AI), Machine Learning (ML), the Internet of Things (IoT)/ LoRaWAN, Cyber Security, AR/VR/MR, Data Analytics, and Blockchain are creating enormous opportunities in every aspect of human lives. This is a very favourable time to rise to the opportunities presented by the 4.0 technologies.

Making India a Global Leader

By creating a conducive ecosystem to nurture young talent with *platforms to learn*, *platforms to do*, and providing necessary resources, we can give wings to the untapped potential from India. Innovation and entrepreneurship should become a culture in every nook and corner of the country. With the right ecosystem, India can grow to become a global leader in advanced technologies.

This transformation needs a holistic 4 stage approach:

- Creating Workforce for 4.0
- Applying R&D in 4.0 Technologies
- Developing World-Class Products
- Building Global Startups

Once India begins to strengthen in advanced technologies, the immediate outcome would be high-paid job opportunities. Along with this, innovations and research in 4.0 Technologies would flourish. Product development in 4.0 and startups will begin to rise and this will be a roadmap for Indian startups to expand globally. A platform like this can also bring disruptive technologies from all across the world to reach every nook and corner of the country.

To make this happen, all the major players of the ecosystem such as national and international governments, corporates, academia, research institutions, industry experts, seasoned entrepreneurs, scientists, and the like need to step in together to promote and support the culture of innovation, entrepreneurship, and technologies at all levels.

About iB Hubs

iB Hubs has been working with a vision to make India one of the global leaders in 4.0 technologies since 2016.

By creating a powerful workforce and carrying out application R&D in Industry 4.0 technologies, *iB Hubs* enables the development of world-class products and global startups. Through various programs, *iB Hubs* nurtured 140+ startups and produced world-class products in advanced technologies such as iB Cricket, CyberEye SPN, and so on. To date, iB Hubs has trained 50,000+ individuals ranging from school and college students, including 3000+ corporate professionals, C-suite executives, academia and industry experts on entrepreneurship and 4.0 technologies.

Through Project 'India 4.0—Dr. APJ', we are in the process of providing free 4.0 education to one crore children from financially backward families. In addition, children are also trained to develop the right mindset, accelerating both their personal and professional growth.

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Social Media: Approach with Caution!

The Benefits … and the Perils … of Social Media for Spiritual Life

Jeffery D Long

The Internet and Spiritual Life

If we are trying to live a meaningful life in a digital world, a topic of central importance is the potential impact that living in a digital world can have upon our spiritual life. When we say we are '*living in a digital world*', that can mean many things. One of the things that it certainly means, though, is that we spend a good deal of our time interacting with others not in person or face-to-face, but through digital media, such as email and social media. I, for one, can say that there are days when I have many more interactions with people through the internet than I have with human beings in my immediate physical environment. This became even more true with the rise of the Covid-19 pandemic than it had been previously, with even my teaching becoming a digital activity, pursued through the medium of Zoom more than in front of a classroom. But even before Covid-19, many of us were living in a digital world.

Why should having a large portion of our interactions with others through the internet have any impact at all upon spiritual life? This question draws our attention to the role of *vāsanā*s and *samskāra*s as we pursue our quest for spiritual awakening and liberation from bondage to the cycle of rebirth. In this article, drawing not so much from systematic research as from observation of my own behaviours and feelings and those of others with whom I have interacted, I would like to draw attention to the ways in which interacting particularly through social media can be, on the one hand, beneficial to spiritual life; but on the other, the ways in which it can be not only counter-productive but actually destructive to our spiritual aspirations.

Social media, like a serpent, must be approached with great care. Perhaps a better analogy is with atomic power. Used in the right way, with proper care and expertise, it can provide abundant clean energy to a world that needs it. Used carelessly—or worse, with malevolent intent—it can bring about the end of humanity. Social media, I shall argue, can be a wonderful instrument for teaching and learning, and for sharing great insight with large numbers of people in a very short time. Used unwisely, though, it can lead us to cultivate mental states and habits that are inimical to the goals of spiritual life.

The Positive Side of Social Media: Benefits both Practical and Profound

The benefits of social media, and of the internet more broadly, are many and abundant: far more than can be narrated here. Just to mention a few, particularly with relevance to spiritual life, there are both practical benefits and benefits of a more profound nature, which touch directly upon the spiritual quest.

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In terms of practical benefits, at its most basic, what social media amounts to is the ability to communicate with large numbers of people very quickly. This has been truly revolutionary for human society and is already transforming us in ways that have yet to be fully measured, analysed, or appreciated. The proliferation of mobile phones, in particular—a revolution that has occurred in tandem with and that bears a symbiotic relation to the rise of social media—has wrought dramatic changes upon even such simple things like the way we feel as we move about in the world. I am old enough to recall when having an automobile breakdown in a remote place, for example, could be an occasion for great anxiety. One would have to wait for a friendly passer-by to see one's problem and pass on the word to the next service station or walk to that station oneself to ask for help in person. Now, help is a phone call away.

Social media has increased our human connection to a marvellous extent. I have friends and family members that I knew long ago, when I was growing up, that I have not seen in decades. At one time, we might have lost all contact with one another. Now, I can check in daily on Facebook and see their latest activities, and also share my activities with them and it is almost as if the distance between us has disappeared. Even in an emergency, social media can be useful. When I broke my ankle a couple of years ago at a conference, I posted a photo of my foot from the emergency room. One of my friends saw it and immediately contacted my wife. This friend, a very kindly lady (and also a fellow devotee of Sri Ramakrishna) drove my wife to the airport so that she could come to the hospital in the city where I was injured. Social media to the rescue! Or rather, social media is a boon when in the hands of good people who use it for the benefit of others.

On a more profound level, social media has made it incredibly easy for spiritual teaching to become available more easily and readily than would at one time have been possible. Some of the Vedanta Societies in the United States have made a practice of posting their talks on YouTube, making Vedantic wisdom available to massive numbers of people who may not be physically close to a Vedanta Society. During the pandemic especially, as people have been unable to gather in person, talks broadcast by Swamis and Pravrajikas over the internet have made *satsanga* available to those who would otherwise be unable to experience it.

And it is not only the Ramakrishna Order that has made use of social media to share its message. It is now possible to perform *puja* online, for example, or to have a virtual *darshan* of a sacred image at a temple from which one may be physically very far away. The opportunities to have spiritual experiences through the medium of the internet—not only listening to talks, but also having darshan, performing rituals, and so on—underscores the Vedantic teaching that all of reality is ultimately a manifestation of consciousness. Whether one is physically present to hear a teacher speak or to participate in worship, or whether one is doing so digitally, the effect can be the same. This is because 'we' are not really where our physical bodies are, in any case. We are beings of pure consciousness. The fact that the internet allows us to extend the range of our awareness well beyond what is possible with the unaided physical senses simply underscores what was always the reality all along: that we are not beings of matter in any case, but of consciousness. The matter is merely the medium through which we experience specific content. This has always been true, even long before anyone even conceived of an internet.

Through the internet, one can access whole libraries of knowledge. All the Vedic scriptures are available to be read, either in the original Sanskrit or as translated into numerous

languages. It is possible to listen to these sacred texts being chanted as well, and even to begin to learn Sanskrit oneself through the internet. And similar things can be said about the scriptures and wisdom of all the world's major religions. Practically everything is available on the internet, along with teachings of contemporary sages from all traditions.

In short, the internet has made vast volumes of knowledge available to anyone with access to it. Pretty much anyone with a mobile phone can now learn the spiritual teachings of a vast array of traditions, as well as gaining scientific knowledge, knowledge about humanity's languages and cultures, and so on.

Of course, this vast collection of knowledge requires a reliable guide in order for it to be comprehensible, and to avoid misunderstanding. I have found with my own students that the vast information content of the internet still requires living teachers for it to be truly useful. In addition to all the knowledge which the internet makes available, there is also a great deal of noise. How does one differentiate between reliable information and misinformation? Just because something is on the internet most emphatically does *not* mean that it is true. And how is one to discern when a fact is being presented and when one is receiving an interpretation? Of course, an interpretation may or may not be valid. But one needs to differentiate between fact and interpretation.

Much of the noise on the internet is generated by social media, which brings us to the topic of the perils of social media for spiritual life.

The Negative Side of Social Media: The Generation and Sustenance of Bad Samskāras

A great deal has already been written by others about the dangers of misinformation being circulated on the internet through social media. Many people use social media not only to keep up with friends or to share events from their lives, but also as their main source of news about what is happening in the world. The capacity for public perception to be manipulated by those who use social media cleverly to perpetuate false (or, at best, one-sided) narratives has already been shown to have dramatically negative impacts on societies around the world. False information circulated on social media about Covid-19 vaccines, for example, has led to large numbers of people refusing to be vaccinated, thus increasing the danger of sickness and death both for themselves and for those to whom they might inadvertently transmit the disease. And passions run so high on social media that my simply using vaccine hesitancy as an example of a negative effect of misinformation will immediately cause large numbers of people who might read this article on the internet to give up reading it and to conclude that I must be part of some vast global conspiracy against them.

It is, in fact, the passions generated on social media to which I wish to draw attention; for it is this aspect of social media that is most dangerous to spiritual life. It is one I have observed for the last few years, both within myself and in others with whom I have interacted. It is also the main reason that one must approach social media with care; for the cultivation of negative passions is not simply an accidental effect of one's engagement with the internet. Rather, it seems that much of the content on social media is specifically calculated to arouse and sustain these passions. *We are constantly being lured into living in a state of perpetual anger and outrage which is ultimately destructive not only to spiritual life, but to sanity itself.*

Vedanta teaches us not only that we are not the physical body; it also teaches that we are

not even the mind. The mind, like the body, can be seen as a dwelling place for the Self, a place with which we identify temporarily prior to our attainment of God-realisation and liberation. The body passes away after a single lifetime and is replaced by another body, while the mind continues to exist—albeit while undergoing a constantly changing series of states—in a subtle form, through our many rebirths. While we are not the mind, the mind is nevertheless our essential instrument for the attainment of liberation. Liberation occurs precisely when the mind purifies itself of false concepts and the many misguided desires that are rooted in these concepts.

The mind shapes the reality that we experience. The poet John Milton writes in *Paradise Lost*: 'The mind is its own place, and in itself can make a heaven of hell, a hell of heaven.'[1] Swami Vivekananda further elaborates on this idea when he writes:

> When the mind is in a particular condition it sees a certain vision, dreams a certain dream. So in this condition, we are all seeing this world and man and animals and all these things. But in this very place, this condition will change. And the very thing we are seeing as earth, we shall see as heaven, or we may see it as the opposite place or as any place we like.[2]

The power of the mind to shape our experience is truly profound. A person who may appear to be surrounded by beautiful objects, who may possess great wealth, and who may enjoy all kinds of privileges within society, may be so unhappy that he ends up taking his own life. Indeed, it is interesting to observe that suicide rates are typically higher in parts of the world where there is more wealth and affluence. Another person may appear to be in dire poverty, and may be facing all kinds of challenges, and yet be full of joy. The first person may have wonderful circumstances, from a material point of view, but lack any sense of life having any meaning or purpose, while the second person, who is dealing with all kinds of difficulties, may be energised by a sense that life is meaningful, and that the struggles of the present will, when faced, lead to something greater in the future. The reason one of these people is miserable while the other is happy is not due to their physical conditions, but due to their state of mind. Again, this world can be a hell or heaven, based on the condition of the mind.

The structure of the mind, according to Vedanta, is conditioned by the *samskāra*s. These are the habitual patterns that we form when we repeatedly make choices of a particular kind. If we tend to become discouraged easily by life's difficulties, this becomes a *samskāra*. The mind will have a tendency to repeat a particular type of action or enter a particular type of state based on its past conditioning. Changing the *samskāra*s is possible. If it were not possible, then liberation would not be possible, because we would just continue repeating the same mental patterns again and again. It is difficult, though, and requires a great deal of effort. A habitual tendency or *samskāra* can be compared to water running downhill. Even if the habit makes us suffer, we fall into it very easily because we have done it so many times. Trying to start a new habit is like rolling a rock up a hill. It involves serious work and commitment. In time, though, this new action will cease to be new, and will itself become a habit: our 'second nature', as the popular saying goes.

In spiritual life, the aim is to cultivate *samskāra*s (habits of the mind) and *vāsanā*s, which are the impulses that drive us towards habitual actions, that are conducive to liberation. The basic method is to imitate the habits

of mind of those who have achieved liberation prior to us. It is these habits of awakened minds that form the basis of moral practices, such as the *yama*s and *niyama*s (nonviolence, telling the truth, non-stealing, self-control, and so on), that make the mind a fit instrument for the attainment of God-realisation. The mind that is so conditioned becomes, as it were, transparent to the light of the infinite Self, which is, in the end, our true dwelling place, beyond both the body and the mind.

How does all of this relate to social media? Clearly, living in the digital age has dramatic effects upon the *samskāra*s and *vāsanā*s of all of us who participate in it. I now possess a *vāsanā* which I never had in my childhood or young adult years: the impulse to check my phone for emails and to check my social media accounts for postings from my friends and for responses to my own postings. This impulse did not exist prior to the digital age. When I engage with the content on my phone, I have also developed a set of responses to it, another set of *samskāra*s and *vāsanā*s.

The way we approach social media is, of course, conditioned strongly by the character that we already had previously. A person who is a bully in in-person interactions is likely to be a bully on social media as well. And a person who is kindly in person is likely to be similarly kind online.

Social media, however, if we surrender control of our mental state to it, has the capacity to reshape our *samskāra*s, and not always in wholesome ways, conducive to God-realisation. Much of the content on social media is crafted with the intent of attracting attention: to get 'clicks', as the expression goes. Sadly, one very powerful way to attract attention is with material that pulls us into negative mental states: content that makes us feel outraged or angry. A great deal of content on social media is precisely of this kind. We read it, we become angry, and we want to express that anger by sharing the content or commenting upon it. Social media also taps into our desire for instant gratification. We, therefore, tend to share or comment without the kind of thoughtful, calm reflection that would produce insight. We thus end up expressing our worst selves on social media. The option of posting anonymously, or under a pseudonym, further fuels this pernicious tendency, as the feeling that there is no accountability gives us permission to write things that may be truly hateful and hurtful. If the issue about which we are writing is also something we care about deeply, we may even feel morally justified about our hateful speech, further shoring up this negative *samskāra*.

Conclusion

Social media and the internet are wonderful gifts to humanity. But we must engage with them wisely and judiciously if we are not to do serious damage to ourselves and others with these powerful technological instruments. *The principle that our words and actions need to reflect our highest ideals needs to be carried into the digital world, every bit as much as into our face-to-face interactions with others.* Our every thought, word, and deed will leave an impression on the mind, and the mind is the instrument by which we can either attain liberation or remain enmeshed in the play of *māyā*. This Vedantic principle does not cease to be true when we interact in the digital realm.

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IMAGE: HTTPS://WWW.THEWEEK.IN

An Ethical Human-centric Rural Economy in the Digital Age

Sridhar Vembu and Ramasubramanian

Background

Sridhar vembu—a techno-entrepreneur with a large IT Product company (CEO of Zoho Corporation), and a recipient of the *Padma Shri* Award, a civilian award given by the Government of India—decided to move and live in a village during the lockdown as he continued to manage his company panning across continents. His interactions and engagement with villagers have created a new form of discourse on education, the role of technology in rural life, and skills and knowledge for jobs today.

Ramasubramanian is a technology consultant turned social activist who for over two decades has been working with rural communities in building institutions, particularly around livelihoods. When they got together for a discussion on the role of technology in rural life, obviously the questions were not merely limited to machine-centric technology alone, but, extended to several aspects of human-centric rural life as well. The dialogue was held in August 2021 between Sri Sridhar Vembu and Sri Ramasubramanian, virtually facilitated by Swami Mahamedhananda, Editor, Vedanta Kesari Magazine and organised by Swami Paramashivananda, Media Lab, Ramakrishna Math, Chennai.

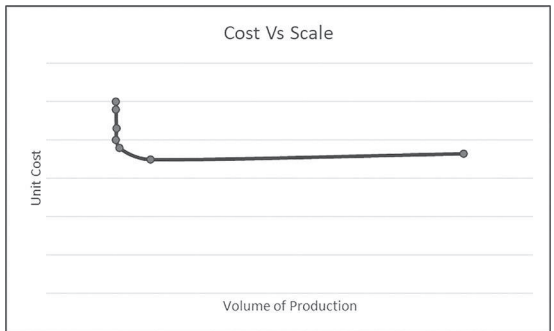
Economy of Scale

Swami Vivekananda once had queried Jamshedji Tata as to what was the need for matchsticks to be produced and imported from Japan when they could be easily manufactured locally in India.[1] This dialogue gains importance as it was happening in the backdrop of the 19th century visual of large-scale industries as vehicles of 'growth' and 'development' using the concept of Economies of Scale. These industries produced goods at a large scale through the concentration of investments, technology, and skilled labour force, which they could sell at a cheaper cost than a local producer or artisan and destroy several local industries. *Applied to the industrial age thinking, the comment from Swamiji raises the crucial question of production by the masses vs. mass production.* This persistent thought of India later became the crux of the Independence Movement. Mahatma Gandhiji appealed to the masses to use locally made goods instead of foreign ones, insisting on achieving self-reliance on the economy as the true freedom.

Re-visiting Swamiji's Question on 'Economy of Scale'

'Why should a villager buy nail clippers made in China? It is not a complicated technology nor something that cannot be produced locally?' — the dialogue starts with a question similar to the one that Swamiji asked the industrialist 150 years ago. The dialogue proceeded to outline why the Economy of Scale argument is overstated in the current situations evident from the following factors:

1. The scale doesn't necessarily mean productivity or cost advantage: The conventionally big scale of production was justified in terms of efficiency and cost; it is largely used to justify financial consolidation rather than productivity. When one accounts for costs for distribution and marketing, logistics and all those costs, then the economies of scale cannot be justified. If we take a cost on one axis and scale on another, then after a point called the knee, there is no further reduction and it flattens out regardless of the scale to which the production is increased. Smaller and simpler products need not be produced in large industries. Both in agriculture[2] and in the software industries, better productivity in smaller units is well established. These are two extremely disconnected examples. In most of the products that we use today, we are to the right of this knee in the curve, which means, we don't have any justification for the scale of production currently being done at all.



**Note: the graph is indicative only and does not pertain to a specific industry*

2. Scale destroys resilience: People end up creating large dependencies that can challenge their business resilience. Automobile companies are shutting down because of a shortage of semiconductor chips.[3] A few weeks drop in production in one part of the world can wipe out whatever savings others may have had of the economies of scale completely. Resilience has never been factored in the economies of scale argument.

3. **Scale destroys regional economic resilience**: Every economy, district level or regional level, cannot have an economic base that is dependent on only one kind of industry. To be resilient, it needs to have a diverse base of competency, production, and productivity. We

cannot have an entire district doing only agriculture or only software or producing only smartphones. Economies to be resilient need to have a diverse product base, particularly so for a region of a million people.

Resilience provides strength to communities to put up with stress and provides them with the capacity to overcome challenges. Globally, the vulnerability of local economies and lack of resilience is seen to be the causes of the breakdown and weakening of societies and communities. This is caused by the degeneration of societal well-being, including its ethical conduct through the promotion of profits and optimising resource usage to that end as a sole purpose of economic activity. Mainstream economic academic institutions, however, even today continue to promote the Economy of Scale argument and may even argue that it is ideal for most of the microprocessors to be made for the entire world in Taiwan.[4] It is presumed to be the way the free market should be and will remain. If we analyse it, free markets were most often created through state subsidy, which is neither mentioned nor factored in. Such people and communities weakening the economic order need to change. A more self-reliant economy can ensure better social order. Today, it is good that we are talking again about this larger Indian vision through the *Atmanirbhar Bharat*.[5] There are similar movements in Europe and the US as well.[6] This is the need of the hour today to recover our rural economic condition.

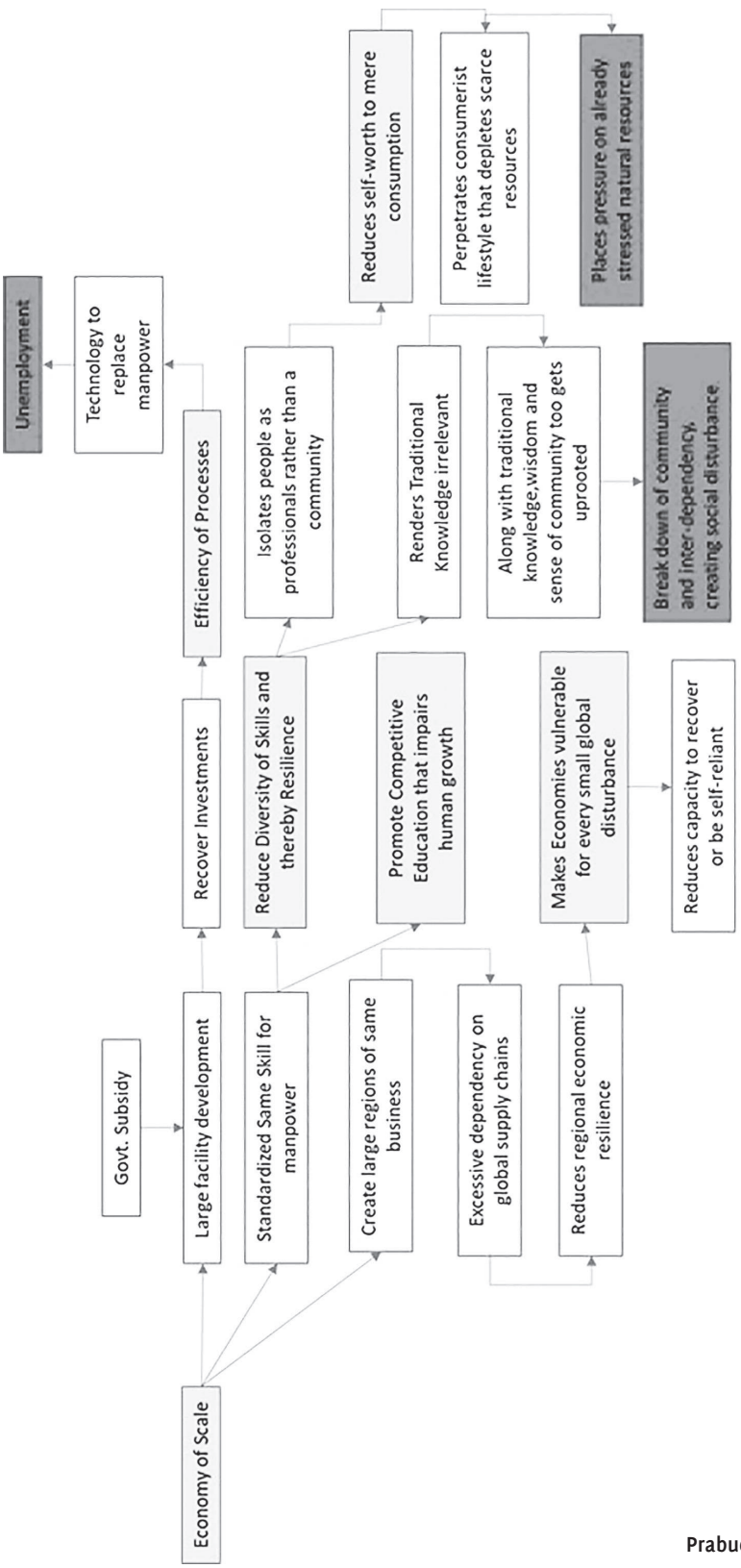
Self-reliant Rural Economies

We have noticed that before the onset of the large-scale flooding of poor-quality products in our urban and rural markets produced in large industries elsewhere, we had much productive capacity, diverse skills, and much self-reliance as the capital flowed within the region. We can give two anecdotal pieces of evidences for the same:

(1) An exercise to understand the number of vocations practised in a village resulted in finding that the villages closer to the city have fewer vocations being practised, whereas villages that are farther from the city and a highway have more diverse kinds of vocations, indicating a better resilience as an economy in villages that are farther from the city. Among our dryland farmers, it is often noticed that they have multiple vocations to reduce risk and build better resilience.

(2) An exercise to track the source of inventory of a village *kirana* (grocery and general items) shop in 1998–99, in a village close to the city of Chennai, it was found that there were about 65% products that were locally made and 35% came from outside. This changed within a period of 10 years though, when the same exercise was repeated in a village that was far away from the highway in a village outside Madurai in 2008, it was found that more than 95% of the products were coming from outside and only about 5% was produced locally. The productive base of the local economy was completely altered through the onset of the mass-produced products crowding the local markets. Knowledge and skills to produce too would consequently reduce.

Villages around the busy religious and cultural town of Thanjavur 45 years ago had diverse skills and occupations, producing diverse products, but today almost all of them have lost to the mass-produced cheaper products from elsewhere. Their children have become landless labourers in these villages now, with no option except migrating[7] in search of a job. So, here the villages are completely empty and this is getting repeated elsewhere as well. Temples don't have anyone visiting them on festival days; streets are empty. The few that remain in such places then start to feel isolated. This has serious emotional and social implications.


Economy of Scale
Govt. Subsidy
Large facility development
Standardized Same Skill for manpower
Create large regions of same business
Excessive dependency on global supply chains
Reduces regional economic resilience
Recover Investments
Reduce Diversity of Skills and thereby Resilience
Promote Competitive Education that impairs human growth
Makes Economies vulnerable for every small global disturbance
Reduces capacity to recover or be self-reliant
Efficiency of Processes
Unemployment
Technology to replace manpower
Isolates people as professionals rather than a community
Renders Traditional Knowledge irrelevant
Along with traditional knowledge,wisdom and sense of community too gets uprooted
Break down of community and inter-dependency, creating social disturbance
Reduces self-worth to mere consumption
Perpetrates consumerist lifestyle that depletes scarce resources
Places pressure on already stressed natural resources

Negative Impact of Scale of Economy

Isolation of such societies pushes people to become more consumerist. The very purpose is defined by how much they consume. This is well witnessed in big cities. People get defined by the brands that they wear, the brand of car they drive, the watch they wear, or the phones they use. Surrounded by a diversity of talent and/or the diversity of vocations, in a sense of the commune, the thoughts go in a different direction. It is no longer materialistic but towards higher art or higher aspirations. So, migration not only has a vocation cost, but it also has a health and wellbeing cost.[8] To perpetuate this today further seems to be a misplaced priority in our midst. Unfortunately, much of such production often is justified in the name of efficiency.

Inclusivity Vs. Efficiency

In the 1980s, the late Prof. C V Seshadri, [9] a scientist who worked a lot on technology and its impact on villages, argued that Equity is good science and wrote against the entire idea of efficiency as a cultural concept. A Panchayat Leader[10] many years ago made a similar point while working in his village, setting up a soap making unit. When there was a need to fix a motor for the extrusion machine, he decided that instead of being fitted with a motor that can provide a constant rotation speed, he could get the job done if it was fitted with a discarded bullock cartwheel that rotated at a variable speed. He said that an elderly lady who couldn't do physically active work in the village can still sit next to the wheel and rotate it physically for a few hours in the day and ensure that the required number of soaps were extruded. *He chose inclusivity in employment over the efficiency of technology*. Just like Economy of Scale, efficiency in the rural context is overstated. This is what the Gandhian Economist J C Kumarappa[11] also called the 'Economy of Permanence'.[12]

When we have many people, who are unemployed or underemployed in the village, who can be employed at a marginal cost, asking someone to import goods that they cannot pay for, because they don't have the money, is a bad idea. And also, introducing a machine for the work suggesting that their methods are inefficient as they can't produce the same quantity, is a poor argument. Why should they pay with money they don't have rather than produce with their inefficient methods themselves? How can we expect this to be development or progress? Inclusivity rather than the efficiency of a machine will keep people rooted in the village, ensure that they are able to contribute to the economy and be part of a strong and healthy society. This is real self-reliance.

Building Self-Reliant Local Economy

Aspirations of the rural youth to earn at par with their urban counterparts is a genuine one; one of the ways to do it is to ensure that we create jobs with better pay in the villages. An issue that often gets spoken of in the context of village vocations and stronger local economies, is the perceived advantage of privileged backgrounds that have gone through the destructive path of economic

IMAGE: HTTPS://NAMMALVARMULTIVERSITY.COM

'growth' and arrived at an understanding that the large industrial economy is failing today. To insist that everyone has the right to destroy the planet a bit more before arriving at wisdom requires several more planets. Thankfully, such as those who want to tread the path are a small segment of the population. About 60% cannot go out of the village even if they tried. As a nation of 1.4 billion people, obviously, we can't export all of them. We need to think of those who cannot and will not go out. What are the opportunities available today in the villages for them; where are the opportunities that we will create for them?

In reality, the rural skill and enterprise creation efforts can get going; for instance, the Zoho rural software divisions enable attracting local talent and avoid 'rural brain drain'. A youth could work doing software for part of the day and work on the farm for the remaining part of the day. In a village, the amount of money earned at par with the city can go a long way in contributing to the local economy as the cost of living in the village is much lesser. Like a person earning a starting pay package in an IT company today, if one were to earn the same in a village, then one can have a far higher impact in the village economy than in an urban set-up. The person potentially could become a leader or mentor, understanding the rural problems at the grass-roots level and providing human-centric solutions, also guiding the next generation, thus building a self-reliant local economy and enriching the well-being of the entire community.

Changes Needed in Education

Mainstream education celebrates better ranks and high paying jobs. Industry complains that those who pass out are not employment-ready and meanwhile government claims that there is a large skill gap, which in a state like Tamil Nadu is placed at a very high 49% projection over the next 5 years.[13] This implies that there is a lack of skilled manpower available and those who are supposedly skilled too are found wanting. Against this backdrop, the Zoho Schools of Learning[14] for over a decade has recruited school pass out candidates, after providing them skills training required for the industry. A new initiative has been taken at rural areas by Zoho schools with students being provided additional skill training with their regular schooling. Today they align themselves with the open schooling system[15] curriculum which gives a lot of flexibility. They are provided knowledge on all household appliances, from electric fans and gas stoves to bikes; they need to be able to take them apart and put them back together. This builds their self-confidence, which is essential for youth. They are also trained in agriculture, to grow their own food and be self-sufficient.

One of the motivations for adopting this strategy in teaching technology was that students learn faster and better if they knew the application of science and it motivates them to learn better. Most of the criticism on mainstream education is that it is out of context, which is inflicted on our youth who don't enjoy it. So, providing them learning with experience through a job helps them to learn faster and better. To

IMAGE: HTTPS://NAMMALVARMULTIVERSITY.COM

provide the same with the ethics component provides for a better perspective and responsible careers. An attempt has been recently initiated called the *Nammalvar Multiversity*[16] in Tamil Nadu, in which students are encouraged to train on the job, learn skills, and start to produce with traditional skill practitioners. In this way they become a part of the local economy straight away—an apprenticeship model where the learning and the earning happen together. Many of the traditional forms of learning were conducted in this manner, where they interned and learnt not merely the skills but also the ethics of the craft.

Combining Traditional Wisdom and Modern Knowledge

Today lots of traditional skills have apparently faded in villages. There is a need to have a stronger local food culture—agriculture needs to be stronger and respectful of nature. A manufacturing sector that is not fully dependent on the outside for its critical works needs to be built as well. While there is a need to have this production revived in the villages, this production needs to be deeply rooted in the traditional ethos of Dharma as well. Unless the rootedness happens within the ethical framework of traditional knowledge systems, we may be creating another destructive economy.

Fortunately, there is an increasing tendency for the youth to connect to nature, which is in line with the traditional wisdom that was embedded in the traditional knowledge systems and vocations earlier. A recently concluded course on Green Economy[17] for college students found that half of the students wanted to go and set up enterprises in their villages and towns. Such positive signs ought to be celebrated in our communities and societies. Celebrations through festivities and rituals that used to be part of many traditional vocations have also disappeared currently. Many of them had ethical roots reiterated in the rituals of the festivals. It is time that the revival of interest for earth-friendly enterprises among the youth be combined with a revival of such festivities as well.

Conclusion

In the Indian thought on Dharma, it is stated that you cannot have development individually; it has to be through cooperation in society. No one grows until everyone in the society grows is the inclusive growth idea that emanates from this concept. Today, inclusive growth is also critical for building resilience within vocations and communities as well. Such growth is only possible with vibrant local rural economies in India that reskill the youth and provide them with the opportunities for manifesting diverse forms of vocations with deeply rooted ethical principles. This will ensure that India remains self-reliant as a society and free as a nation. PB

Notes and References

1. As reported in the book on Economic Thinking, Ramakrishna Mission Institute of Culture
2. Several studies have been published in recent years to establish this from major inter-governmental agencies to multi-lateral ones across the world. See Navin Ramankutty, 'Are Small Farms Better?' <https://sustainabilitycommunity.springernature.com/posts/are-small-farms-better>.
3. At the time of this interview being recorded there were reports of major auto manufacturers globally cutting down their production and in some cases shutting down their production units altogether due to the shortage of semiconductors that were largely manufactured in one location for the global markets, link to article: <https://apnews.com/article/coronavirus-pandemic-bb12adb6106019a618440d85fd91f77e>.
4. It is reported that a single company in Taiwan produces more than 92% of the world's

processors and the production disturbance of the plant, can affect the production of phones, cars, and all sophisticated chips based industries in the world. Articles on this in these links: <mishtalk.com/economics/a-single-company-in-taiwan-makes-92-of-the-worlds-most-sophisticated-chips> and <https://www.cnbc.com/2021/03/16/2-charts-show-how-much-the-world-depends-on-taiwan-for-semiconductors.htm>.

5. India has had a long history of political vision of self-reliance, expressed through the concept of Swadeshi by Gandhi and J C Kumarappa, a Gandhian Economist, and more recently through the vision of *Atma Nirbhar Bharat*, a term popularised by the Prime Minister Sri Narendra Modi. For more details on this scheme by the Government of India, see <https://aatmanirbharbharat.mygov.in/>.
6. More about the Institute for Local Self-Reliance in the US can be found in their website <https://ilsr.org/>.
7. Earlier in 2021, Government of India admitted in the Supreme Court that there could be as much as 100 million people who are migrant workers in different sectors across India.
8. A look at the Taiwan Economy serves as a proof for this insight as well. In a country where almost 70% of the population is employed in the small and medium sector of enterprises and about 40% in the manufacturing sector that dominates the electronics goods production of the world (as already mentioned), non-communicable diseases causes almost 80% of deaths. See <https://www.brookings.edu/opinions/taiwans-health-care-system-the-next-20-years/>.
9. A note on the critic to the concept of entropy in Thermodynamics and thereby the definition of 'work' and 'efficiency' as per the modern science by Dr C V Seshadri and its impact on scientific thought today is explained in an article by Prof. Shiv Vishwanath: <https://ia800402.us.archive.org/17/items/LifeAndWorksOfProf.C.V.Seshadri/cvs-shiv.pdf>.
10. Rangasamy Elango is a Panchayat Leader in the village of Kuthambakkam, Thiruvallur District, Tamil Nadu, who has worked in manifesting the local economy concepts utilising and furthering the ideas of Gandhian Economist, J C Kumarappa. More about Elango's work can be read in the following link: <https://vikalpsangam.org/article/ignited-minds-elango-turns-kuthambakkam-village-as-a-model-village/>.
11. J C Kumarappa is often called the first Ecological Economist. He was a close associate of Gandhiji, who called him the 'doctor of our village industries'. More can be read about him in <www.mkgandhi.org/associates/jck.htm>.
12. The pathbreaking new theory of Economy proposed by J C Kumarappa is available for free in <www.mkgandhi.org/ebks/economy-of-permanence.pdf>.
13. The Tamil Nadu state Skill Gap Analysis with projections until 2025, states that the state will have a skill gap in terms of jobs for which skilled manpower is not available at about 49% (Tamil Nadu Skill Gap Report.pdf (nsdcindia.org)) and there are several studies that indicate what the industry needs from the candidates and the level to which the candidates themselves feel that they are competent does have a large gap (ex: in agriculture sector study see (pdf) 'Skill-Gap Analysis of Agricultural Graduates in Tamil Nadu' (researchgate.net)
14. More details on the Zoho School of Learning here: <https://www.zohoschools.com/>.
15. National Institute of Open Schooling, known as NIOS is a Government of India education accreditation of choice for several parents, students, and initiatives on alternative education in India. More details about the NIOS stream that provides diverse learning opportunities to students available here: <https://nios.ac.in/>.
16. Nammalvar was a legendary Organic Farming leader of Tamil Nadu. The Nammalvar Multiversity is a venture that provides diverse knowledge courses not offered in the university system and learning them through diverse ways as well. More about the venture may be found online at: <www.nammalvarmultiversity.com>.
17. The Samanvaya introductory course on Green Economy is a half-semester course offered to students undergoing their Masters programme in Social Entrepreneurship or Sustainable Development by Samanvaya, more details are available here: <https://www.samanvaya.com/index.php/blog/green-economy-course>.

Nature Connectedness: An Avenue to a Meaningful Life in the Digital Age

Sravanti Thutupalli

> Cleave not the sky. Injure not the mid-space. Be in the harmony with the earth. This sharpened axe has led you to the great good fortune. Therefore, O you divine Lord of forests, grow with your hundreds of branches. May we also grow with thousands of branches. (*Yajur Veda*, 5.43)[1]

Beneath the forest floor lies a network that connects nearly all land plants. Some members of this network share resources preventing neighbouring plants from dying and others parasitise resources, often releasing toxins to outcompete neighbours. The network itself is made of mycorrhizal fungi. The fungi siphon carbohydrates from the trees, while the trees in turn benefit from the extended root system that the fungi provide. Where does the tree end and the fungus begin?

The network of trees is often called the *Wood Wide Web*—this simple but wondrous example reminds us of inextricable links between all of life and it bears a strong similarity to the internet that connects all of us digitally.

Can this example serve as a metaphor for our lives as we find ourselves increasingly connected by the web of digital technology? Can we draw inspiration from nature and nature connectedness to live meaningful lives?

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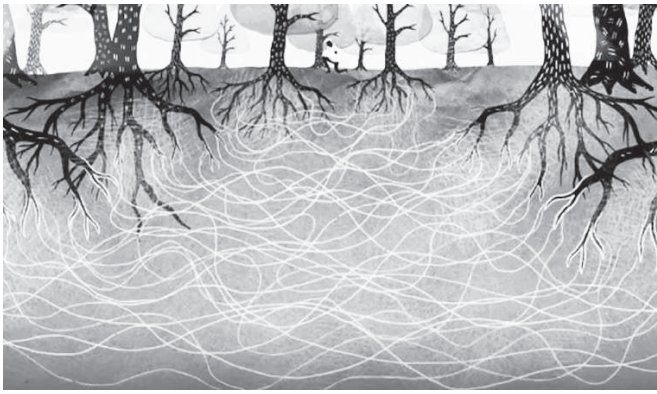
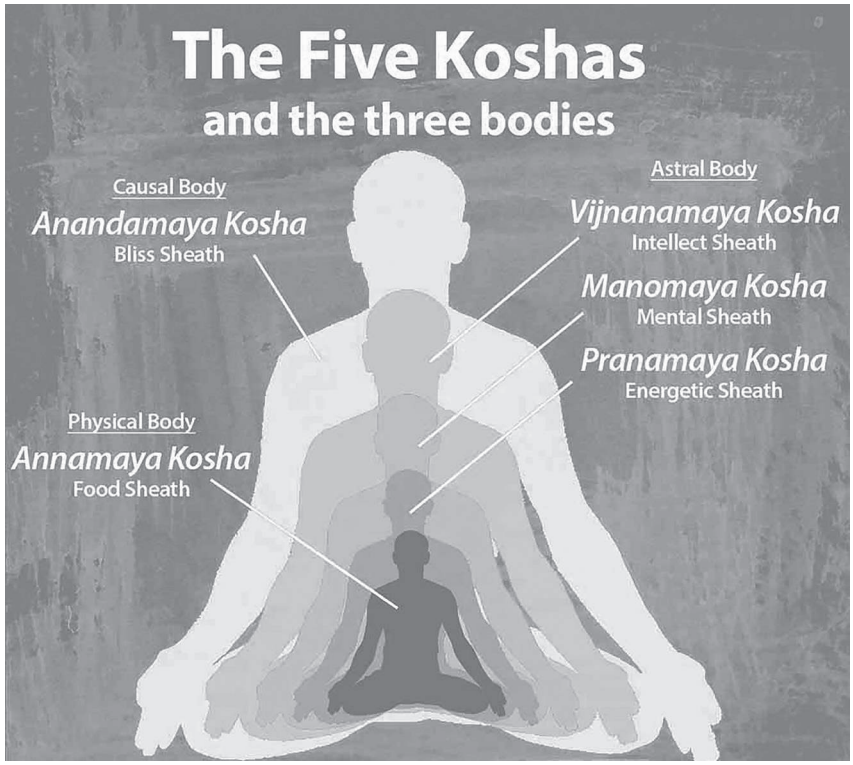


The Wood Wide Web [2]

IMAGE: HTTPS://THEKIDSHOULDSEETHIS.COM

There is an abundance of natural phenomena that reveal their underlying digital character. For example, precise counting is seen in cicadas (insects that are sometimes called locusts), which feed on the sap of trees, and live most of their lives underground. They emerge from the ground only every 13 years. After laying eggs, adult cicadas die within two months and this 13-year cycle is repeated with a very precise periodicity.

Our genetic makeup, in the form of DNA (deoxyribonucleic acid), is a repository of data required to produce an adult from a single-celled fertilised egg. As far as we know, DNA is the source code for all life. While binary encoding, used in digital technology, has 0 and 1 as the encoding elements or the 'digital alphabet', DNA has four 'alphabets' or constituent digits—A, T, G, C. These letters correspond to bases whose



sequences determine which proteins our cells make. Thus, the language of DNA is digital, and living things are bound by this unifying code. So ubiquitous and unifying is this code, that biotechnology has allowed us to take genes from one organism and transfer them to another. For example, insulin, used to treat diabetic patients, is manufactured using bacteria that have been fitted with the human gene for insulin. This unifying language of DNA is translated into the wondrous diversity of life on earth—and is symbolic of beings 'manifesting Himself in all forms'.[3] Thus, nature—defined in this article as all living organisms—counts, measures, stores, processes, and communicates data just as the digital systems do—*there is an underlying digital character to Nature*.

However, it is too limiting to define nature as being digital alone. For instance, even the very proteins that the digital DNA sequences encode, operate in an analogue fashion; many proteins execute continuous motions which are crucial for their function. In fact, our everyday natural systems are amply analogue—we measure distances in continua, the music that we hear is composed of continuous tones, rainbows are a reminder of the seamless continuity of colour. All in all, there is an interplay between the underlying digital character of nature and our experiences with its many analogue forms. Although our experiences with the innumerable analogue manifestations of natural phenomena are being recorded as information stored and transmitted in digital form, these cannot always be broken down into simplifying code.

The *Panchakosha*s elucidated in the *Taittiriya Upanishad* mediate our experiences—the experience of the gross body (*Annamaya Kosha*), our life energy (*Pranamaya Kosha*), the mind (*Manomaya Kosha*), the intellect (*Vijnanamaya*

IMAGE: HTTPS://SIVANANDAYOGAFARM.ORG

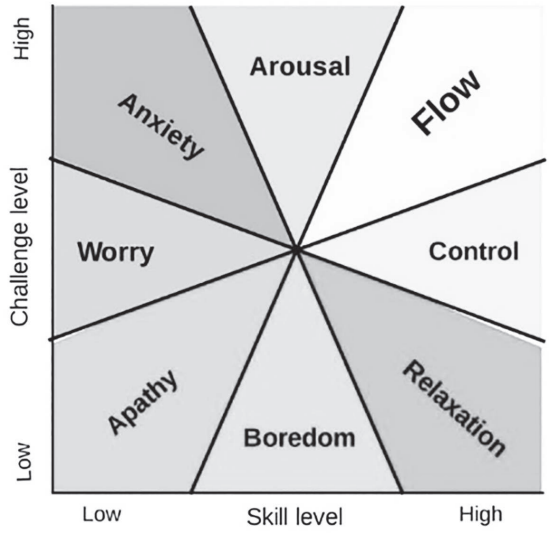
Kosha), and the state of bliss (*Anandamaya Kosha*). Nurturing and transcending the *Kosha*s, from the grossest (*Annamaya Kosha*) to subtlest (*Anandamaya Kosha*) provides a path towards meaningful experiences by 'progressive resolution of each into a subtler and more pervasive substratum until ultimately all are resolved into pure awareness. *The koshas are arranged in an unbroken, continuous series, being manifestation of the same reality*.'[4]

How can we reconcile this with the ever-increasing digital world of storage, communication, and evaluation of our experiences? Can such a reconciliation help us lead more meaningful lives?

Our bodies and senses are a valuable source of knowledge of the material world and as vehicles for action. It is important to care for our physical being insofar as it provides us with a means to travel inward towards subtler levels (or meanings) of existence. *But how do we transcend the physical to travel inward?*

Experiences of nature and digital technology can lead to long, sustained engagement—many people can spend hours on their mobile phones and the very same people also enjoy hours walking, going on treks, bird watching, gardening, and the like. Both experiences require our attention and lead to some degree of temporal dissonance causing us to lose track of time.

However, there are important cognitive and neurocognitive differences between the two experiences. The readers may reflect on their own activities during which 'smooth and accurate performance with an acute absorption in the task to the point of time dissociation and dissociative tendencies'[5] was achieved. In most cases, such a state, also called a 'flow state' by positive psychologists, can lead to 500% higher productivity,[5] and is achieved during self-fulfilling activities.

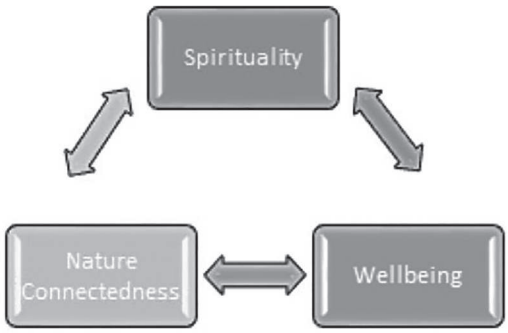


Challenge Level vs Skill Level [5]

Flow states arise when both the challenge and skill requirement are high and are characterised by 'an experience of time distortion, in which a person loses awareness of how time is passing [and] a feeling of transcendence where the person feels a sense of unity with the activity.'[5]

Conscious awareness of the material self is facilitated through brain activity projected onto the prefrontal cortex. Flow experiences are strongly correlated to a significant diminishment of prefrontal cortex activity.[5] Such experiences diminish identification of the Self with the body and provide a means to transcend the *Annamaya Kosha*.

Contemporary life is filled with distractions (*phone calls, emails, messages, social media*) *that constantly interrupt or prevent flow experiences.* Further, the skill and challenge level required to engage with social media and the internet is low. When we watch television, participate in virtual reality games, or interact with artificial intelligent bots, our emotional states are manipulated. Our entire focus is shifted onto the characters on the screen, so much so that we



The Connection between Well-being, Nature, and Spirituality

identify with the characters on screen. When the main character is scared, so are we, and we await in tension not knowing what will come. If anything, this restores identification with a body (*Annamaya Kosha*)—be it our own, or the person on the screen and can hinder inward progress.

When told of the origins of life, the innocent child and the curious adult will always dig deeper—*how do we grow from a single cell? What drives this growth and development?* Physicists and biologists are increasingly interested in the phenomena of self-organisation—a tendency for form and function to emerge without a central set of instructions. Perhaps, it is apt to draw an analogy between self-organisation and the *prana*, the fundamental life force or breath. The example of the mycorrhizal fungal network demonstrates how inextricably life is connected. Truly identifying this unity along with the fundamental life force, provides a route to transcending the material, physical world and nurtures the *pranamaya kosha*.

How can this realisation help us find meaning in an age when our connection to nature seems to be waning while the digital in our life is dominating? Let us first ponder the question of a meaningful life. Identifying ourselves as being a small part of such a large network (or being one with the network), immediately points to our dispensability and humbles us. What exactly does this identification mean?

Nature Connectedness Leads to Humility Towards a Meaningful Life

There is a growing movement claiming that the very loss of nature connectedness has led to tremendous change in our thinking—disconnecting us from our purpose (be it social or spiritual).

Nature connectedness refers to how well we identify with nature—do we see ourselves as part of nature or separate from it? Do we love nature to the extent of our belief that we have a role to play in protecting it? A connection to nature, which surfaces in many forms (the time we spend in nature, the effort we put into learning about nature, protecting it, or even utilising it to some extent), has a strong correlation to happiness.[6]

Nature inspires feelings of awe and transcendence. Ecological self-theory proposed that nature connectedness and spirituality are strongly linked. This positive link is what ultimately leads us to attain optimal psychological functioning and true potential. Indeed, well-being is experienced through a spiritual interconnectedness with all things.[7] With this interconnectedness, we begin to see that 'the reflection makes us seem many, as when the one sun reflects in a million dew-drops and seems a million tiny suns. The reflection must vanish if we are to identify ourselves with our real nature.'[8] This quotation from Swami Vivekananda actually points to the absurdity of the idea of our personal identity, our likes and dislikes, defining who we truly are, and thus nurtures the *Manomaya Kosha*. The *Manomaya Kosha*, where all thoughts originate (doubt, fear, anger, exhilaration, depression, or joy) is the part of the mind that controls the 'lower' mental functions.

Swami Vivekananda's words lend themselves to humility, which lays a path of reverence and respect for everything and everyone around us. These ideas are firmly rooted in all ancient cultures—the basis of human existence is not set apart from nature. While these ideas were organic in the past, with the digital age, it is incumbent on us to consciously maintain our connection to nature. It is also imperative that we do not enforce the 'digitisation' of our many experiences simply for the sake of its storage or transmission—in many instances not only is that impossible but also deeply disruptive. This path reduces our obsession with ourselves, our intellects, and our egos. It brushes aside our own wants and petty desires, and reveals our place in the Infinite of nature.

Such a perspective lends itself to a life of cooperation and harmony, both of which are found in abundance in nature. Cooperation is considered one of the most important behaviours in nature. Ant colonies, schools of fish, flocks of birds—are all examples of intra species harmony that allows the species to thrive. Across species too, cooperation is seen: while honey bees gather nectar, pollen from the same flower sticks to the bee. This pollen is dropped off when the bee feeds on the next flower hence enhancing plant reproduction. One of the most interesting examples of cooperation is that of humans and their gut bacteria. Gut bacteria are known to improve our digestion, influence our mood, and even protect us from pathogens. In fact, our bodies are comprised of more bacterial cells than human cells! That we could not function without the help of these microscopic organisms is humbling indeed. However, an optimal balance is required between host and bacteria; or else it can lead to disease. So conflict does exist in nature—but nature operates by a 'set of rules for negotiating conflicts of interest in a way that resolves them'.[9]

On the other hand, the utilitarian view of nature is a manifestation of self-perception being material. That we exploit nature so carelessly, to the point of extinction, to the point that life may vanish on earth, demonstrates our investment in our bodies, and lower mental functions. We may choose to nurture the determinative faculties[10] of the *Vijnanamaya Kosha*. The *Vijnanamaya Kosha* represents the intelligent and discriminative part of our mental functions. It is the *Kosha* that can direct us toward heightened experiences. When left unchecked, it may lead us to unreflective bodily experiences.[4]

Indeed, it is sad that we do not have to turn far to see the near extinction of eco-consciousness in humankind. We see accumulating plastic on our streets but the reality is a much more amplified version of what we see in our daily lives. The ocean, and ocean life is drowning under the weight of plastic waste and children are suffocating in the very air that gives us life. Digital technology too has created mountains of waste (see images on page 170).

The digital world may prevent us from achieving our potential, and perhaps further distance us from Nature. But, is there another side to this argument?

The Digital Divide or Digital Connect?

The technological advancements that have so often caused us to disconnect from our friends and family, which have so often sent us into long sessions of browsing and brooding can have exactly the opposite effect by enhancing our experiences of nature.

During the coronavirus lockdown, when people were restricted to the confines of their home, even watching scenes of nature on their digital screens has been shown to provide a

An Island of Plastic and a Mountain of E-Waste Demonstrating a Loss in Eco-Consciousness

calming effect.[11] Cell phone apps can be used to help identify plants, help track bird migration patterns, and even participate in nature conservation movements. Such technology and large-scale citizen science movements have been created to improve our nature connectedness. This kind of digital technology enables our nature connectedness and can be instrumental in revealing to us that '*from the lowest form of life to man, the soul is manifesting itself through nature*'.[12]

In recent times, digital technology has enabled people from across the globe to connect, but it has also exacerbated the difficulties of those who cannot rely on it. Those who cannot make their livelihood through technology, for example, the children who do not have access to online school, have all suffered. Technology is a tool to help achieve natural connectedness in the digital age. However, just as bacteria in our guts leads to good health when well balanced, so also digital systems, when put to optimal use, can enhance the meaning of life.

Technological Innovations for Tomorrow's Giants

Some inventions and innovations solve today's problems, but create tomorrow's burden. Examples of these include plastic, massive extraction and use of fossil fuels, microplastics in cosmetic products—all 'innovations' that were perceived to be taking humans to leap ahead, but later proved to be disastrous. Digital technology consumes many non-renewable resources, including precious metals, fossil fuels, disrupts ecologies due to factory production, and can even pose several health hazards (mental and physical). At present, we are standing on the cusp of many more massive digital innovations with the advent of machine learning and artificial intelligence.

Certainly, the inventors of these technologies would not have foreseen the long-term harmful effects of their work—and arguably could not have known of these effects. So should we stop innovating, and creating? 'Through creativity, the self is positioned in the heart of the object (the entire external reality), the image, and the word and yet stands outside each of them. It is an extension of imagination through sensory experience, intuition and wisdom, ultimately into the realm of *Ananda*.'[13] Creativity is a thread in the very fabric of what it means to be human and a path inwards to the subtlest of the *kosha*s—the *Anandamaya Kosha*. In fact, cultivating creativity is a means to removing the dichotomy of subject and object, bringing them together and

IMAGE: HTTP://ESCAPADEPR.COM & HTTPS://WWW.ALLABOUTCIRCUITS.COM

allowing them to merge. This description is reminiscent of the earlier definition of flow experiences given in this article. The journey began by transcending the *Annamaya Kosha* through flow experiences and reaches a similar destination with time and space being ephemeral showing the interconnectedness of the *Kosha*s.

Applying some simple criteria, inspired by our oneness with all of life (or nature as defined in this article), will steer creativity and in turn innovation towards long term sustainability. The effect on the posterity of all living beings is difficult to predict in practice; but we should ask ourselves whether our actions are bringing us closer to nature, are they nurturing the sheaths of the *Panchakosha*s to ensure we progress from the gross to the subtle? Ultimately, we should ask if our innovations are moving us closer to nature, or creating a disconnect with it. If our innovations enhance our nature connectedness, blurring distinctions between us and them, object and known, we can progress towards more meaningful lives.

Conclusion

Small practical steps have been alluded to in this article to pave a path for meaning in our everyday lives. How we experience nature can be analysed through the lens of the *Panchakosha*s. That nature seamlessly integrates both the digital and the analogue, and that nature's nature has incredible, awe-inspiring experiences to offer, provides us with an opportunity to develop and cultivate our humility and perceive our true place in the web of life. This very humility can be our instrument to practise discernment while using and developing resources—including digital technology.

While we cannot reverse the rapid juggernaut of technological innovations in the digital age, we can ensure that they are used towards tangible good (spiritual, social, ecological) with judicious use that may serve Nature. The old adage is true indeed that 'we stand on the shoulder of giants'. Now, we may find meaning in our life in supporting the giants of tomorrow on our shoulders. PB

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Collapsing Separateness

Gitanjali Murari

Those born before the 1980s would be familiar with the rotary dial phone, the only type of instrument available at that time. Since then, the telephone has seen many changes, morphing finally into mobile phones, the latter evolving faster than a baby learning to talk and penetrating every corner of the country, unlike its elite ancestor. Other gadgets too saw changes. Radios, transistors, and record players vanished, replaced with cassettes, compact discs, MP3 players, and finally streaming services, the distribution becoming more widespread with every successive innovation.

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More concentrated in metros, black and white televisions faded from our memory in a snap when TV screens burst into colour. Still, the benefits of this rapidly evolving technology remained circumscribed. It was with the spread of the Internet that satellite television with its multitudinous channels muscled past every socio-economic barrier, even into remote villages, beaming content from all over the world. There has been more diversification ever since, a range of digital platforms and social media have been changing the way we live; the entire world is now our playfield.

Let's for a moment peep into history. Before the advent of railways, automobiles, and aeroplanes, man travelled by animal-drawn carts and ships. Given the obvious limitations, the extent of man's exploration of the earth was

IMAGE: HTTPS://ARSTECHNICA.COM

astounding. Driven by curiosity and a love for adventure, he left his familiar environment to discover strange lands and peoples. And when he returned, he regaled his people with wondrous anecdotes that seemed like fairy tales. He came away perhaps a little changed, his mind a shade expanded, leaving behind a similar impression on his hosts. Both no doubt benefitted in knowing each other, perceiving commonalities amidst spectacular differences. Then came the industrial revolution. It dramatically transformed the way we travelled, shrinking distances, bridging gaps between myriad cultures, forcing man to quickly develop an understanding of alien ways. And in doing so, he understood himself better. His playfield had broadened, serving to emphasise the universality of the human life experience in every region of the earth.

The miracle of scientific innovation circling the earth from its place of origin and leaving no place or culture untouched, finds an explanation in this illuminative statement by Swami Vivekananda: 'The greatest force is derived from the power of thought. The finer the element, the more powerful it is. The silent power of thought influences people even at a distance, because the mind is one as well as many. *The universe is a cobweb; minds are spiders*.'[1] Fast-forward to the digital age, and we see this quote exemplified in the cobweb of the Internet. It has the spiders of our minds enraptured, informed, educated, and entertained. It began as an idea, an extremely subtle element, that was nurtured by scientists for the easy sharing of information among a few groups. Then it exploded, freely accessible to all. The network spanned the globe, giving hope to millions of people who longed to climb out of the deep, dark well of poverty and injustice into a fairer, egalitarian world.

The virtual universe of the Internet is a delightful place. In it, we debate, study, express, chat, love, hate, weep, and laugh, spinning and expanding the web without a pause. Distances and time contract, and we experience virtual reality *together*. Aided by the Covid-19 pandemic, the Internet has accomplished what until 2019 was unthinkable—working from home. It is now the norm rather than the exception. This infinite cobweb of communication binds us in ties that are invisible to the human eye. By expressing our thoughts, sharing our experiences, we exert influence on complete strangers. People from all parts of the world meet virtually in a matter of seconds, unhindered by caste, creed, gender, colour, nationality, religion, or ideology. Highly democratic, the Internet is no respecter of social norms and traditions.

Our lives have been quietly revolutionised and we have barely noticed that all barriers to knowledge have collapsed. The more stubbornly we cling to our man-made walls, the more the Internet leaps over them with gleeful impunity. It is the great leveller. The field of its influence is the whole world and its effects are instantaneous. Opinions, beliefs, or propositions from a far-flung corner of the earth can have an almost immediate impact elsewhere. According to the theory of the butterfly effect, the flap of a butterfly's wings can create a hurricane halfway across the world. The Internet travels much faster than that. Unlike the previous ages, our *interconnectedness* stares us in the face like never before. Not just physical distance, but the distance between minds has also collapsed.

More than a hundred years ago, in his lecture on 'Vedanta and Its Application to Indian Life', Swamiji prophesied: 'Even in politics and sociology, problems that were only national twenty years ago can no more be solved on national grounds only. They are assuming huge proportions, gigantic shapes. They can only be solved when looked at in the broader light

of international grounds.'[2] This holds overwhelmingly true for the present time with the whole world collaborating to end the Covid-19 pandemic.

The Internet is continually expanding to accommodate variety. It supports diverse networks, a host of applications and content that caters to different minds. It seems to mimic nature, which is a celebration of variety. Not content with creating a rose, nature has spawned a range in different colours and sizes. And this principle applies to humans as well. Not only do we look different, but each of us also has unique fingerprints, unique personalities, likes and dislikes, behaviour patterns, our very own Gods. '*Jati* means creation', writes Swamiji in his letter to Justice Sir Subramanya Iyer, dated 3 January 1895. 'I am one, I become many. Unity is before creation, diversity is creation. Now if this diversity stops, creation will be destroyed. So long as any species is vigorous and active, it must throw out varieties. When it ceases or is stopped from breeding varieties, it dies.'[3]

Singularity, therefore, breeds plurality. Common ground is necessary for variety. Yet, Man in his ignorance has continually tried to stamp out diversity amongst his own, accepting superficial differences based on climate and cultural zones as proof of the existence of, as some anthropologists claim, *hundreds* of human races, each evolving at a different pace, some more superior than others.

In the pre-digital era, while on the one hand, man, the explorer, was thrilled to discover cultures beyond his ken, he also used his power to subjugate indigenous tribes. Treating them no better than abnormalities, he either excised or 'civilised' them for the sake of maintaining the social status quo. The degrees of separation experienced by different societies then, literally and figuratively, spanned oceans. From an indefinite time, the caste system in India has been used as a weapon of exploitation and tyranny; its divisive practice ensuring a gulf between different groups of people, all belonging to a single territory. Deprived of the light of knowledge, the oppressed were forced into poverty and inertia. Swamiji bluntly states in the same lecture referred above: '...and your own people have taken out all your strength, my brethren.'[4]

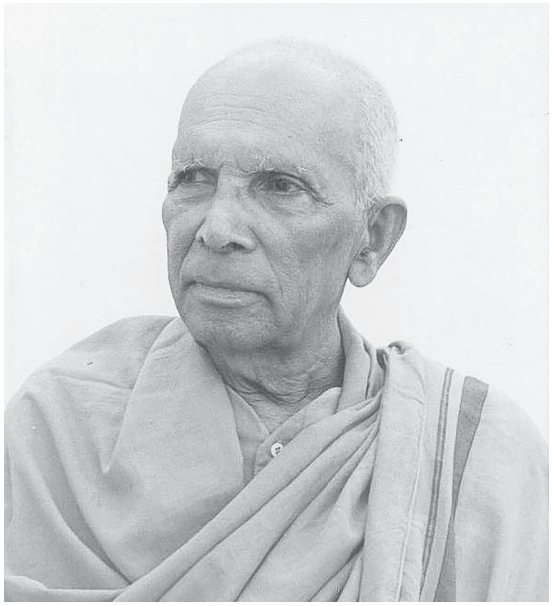
In the letter to Justice Iyer mentioned earlier, Swamiji goes on to add: 'The present caste is not the real *Jati*, but a hindrance to its progress. It really has prevented the free action of *Jati*, i.e. caste or variation.'[5] Therefore, differences based on physical features, languages, foods, mental capacity, or beliefs, are nothing but this wonderful variation, springing from the common ground of humanity. After years of research on race, Alan R Templeton, an American geneticist and statistician at Washington University, concluded in 2016: 'The answer to the question whether races exist in humans is clear and unambiguous: no.'[6]

This vigorous practise of denying others their rights continues in the digital age. Online abuse, threats, or trolling as it is called, are attacks to frighten into submission those who dare to diverge from the standards set by the influential. Yet, this age is witnessing the rise of those disenfranchised for far too long. Freedom of expression on the Internet is not a prerogative of the few. It is a basic human right. Consequently, there is a sense of equality in the virtual world, unlike in the real world. Our interconnectedness—the constant sharing of thoughts and ideas—is helping many find their voice, the courage to challenge the status quo and reject the indignities suffered for generations. What was tolerable or acceptable even a decade ago is now under minute scrutiny. Wrongful action or behaviour draws immediate critical attention and gets 'called out'. This proves that our value system is constantly evolving.

The ever-changing nature of human values is reflected in scientific developments. As our need for greater satisfaction evolves, so does technology. The impact of evolution is *inside-out*. Swami Ranganathananda writes in his exposition of the Gita: 'Julian Huxley wanted physical sciences to develop into a higher science to deal with the subject of fulfilment and he calls it *a science of human possibilities*. That is the exact status of India's ancient Vedanta.'[7]

Like Maslow, whose hierarchy of needs leads to self-actualisation at the very top of the pyramid, Huxley, a biologist and philosopher, believed that man journeys through levels of temporary satisfaction, transcending them one by one to ultimately reach a state of complete and eternal fulfilment. Swami Ranganathananda described this journey as an adventure with 'many heights to conquer',[8] calling all people of the world, 'a great line of pilgrims'.[9] 'Our philosophers never tell you to be dried up ascetics', he writes, 'you give up something because you have got something better, something higher, something more valuable. *And the highest value is spiritual realization*.'[10] This is evident from the popularity of online spiritual and intellectual discourses, pointing to an inherent human tendency to continually grow into happier beings, which, in this current age, is expressing itself more emphatically.

That the digital medium thrives on interconnectedness, diversity, and equality, is quite obvious. As humanity continues to chase fulfilment, technologies of the future will be even more sophisticated. Products and services that exist only in a sci-fi writer's imagination, now may become all too real. The gap between inequalities may perhaps diminish or even vanish but new forms of injustices may also arise. And because we will be more intricately meshed together, the repercussions of these injustices will be more swift and harsh. It is paradoxical then that while we recognise our interdependence and acknowledge the influence we have on each other, it takes us little time to form prejudices.



Swami Ranganathananda (1908–2005)

'The sense organs work through the nervous system', writes Swami Ranganathananda, 'and the speed of the nerve impulse will determine how much the senses can do. Hardly some 200 kilometres per hour is the speed of a nerve impulse. How ordinary it is. How can it penetrate into the truth of things?'[11] To attain perfect equality and freedom, that is, absolute well-being, is our birthright. Swami Vivekananda emphasised that this can be acquired only through the knowledge of the Self. In his letter to E T Sturdy, dated 9 August 1895, Swamiji writes: 'There is but one basis of well-being, social, political or spiritual—to know that I and my brother are *one*. This is true for all countries and all people.'[12] All other attempts to achieve absolute welfare, no doubt well-intentioned, will be short-lived. This has been amply demonstrated to us in our lifetime.

Victor Frankl (1905–1997)

Despite India banning caste-based discrimination in 1948, the evils of the caste system persist to this day. Even after shattering the glass ceiling, women all over the world continue to be victims of misogyny. Racial prejudices remain and the ranks of the extreme poor have swelled.

If we are unable to go beyond the sway of the sensory system, chances are that in the future too, we will remain contracted into separate units and the scaling of the highest peak of fulfilment will stay a distant dream, well out of our reach. Our life experience will be dominated by short spells of satisfaction and longer periods of discontent. Stagnation and decay, as in previous ages, will be inevitable in the ages to come. This is a dismal prospect for the only thinking species on the planet with the means and ability to change its fate.

Viktor Frankl, an Austrian psychologist and holocaust survivor, explains in his famous book, *Man's Search for Meaning*, that humanity is perpetually driven to seek purpose in life. But a purpose that brings a higher level of happiness requires flipping the question, '*what is the meaning of life?*' to *'what meaning can I bring to life*?' Man must answer to life by being responsible, he asserted. And this has a direct bearing on man's character and attitude.

'All high character is based upon the refining of psychic energies', writes Swami Ranganathananda. 'Raw psychic energy gives you crude character. ... We have refineries in India now, we take crude oil and refine that oil, and out of that refinery, we get beautiful petroleum products. Even fine scents ... Similarly, nature has given to man a wonderful refinery of experience within this human system. Take crude experience, refine it, and then, send out beautiful products of character—love, compassion, peace, efficiency of work, dedication.'[13] Frankl refined his experiences of concentration camps and added meaning to the lives of others, not just his alone. He says rather tellingly: '*In some way, suffering ceases to be suffering at the moment it finds a meaning, such as the meaning of a sacrifice.*'[14]

Thousands of years ago, Sri Krishna discussed this concept of sacrifice or *yajña* through the description of two types of efficiency in work—one, which creates a change in the world around us. All work has that effect, including mundane housework which has a significant impact on home and family. The second efficiency in work produces an internal effect, a change in our minds. If it is a good impact, that is, takes us nearer to our pure nature, then we can be certain that the work we are engaged in is the best, the noblest. Sri Krishna explains that work for the sake of *yajña* or sacrifice produces both efficiencies—peace and fulfilment in the individual, which ripples out in a beneficial wave into the immediate environment.

Sacrificing financial gain for public welfare is not customary in our times but whenever we catch a glimpse of its bright light, our faith in humanity is restored. For decades, lack of profitability has kept private firms away from funding research that could help prevent or cure diseases suffered by millions of poor people. Yet, the Baylor College of Medicine in Texas found its purpose in this very area. When asked about the low price of the Corbevax Covid vaccine, comparable to the price of a bottle of water,

Peter Hotez, the co-director of the centre said: 'This is not a money-making vaccine. This is a people's vaccine. Low-cost people's vaccine for low and middle-income countries.'[15] Hotez went on to add that his centre had devoted 20 years developing vaccines for the 'neglected diseases of poverty'. Unsurprisingly, Corbevax has not been patented. 'We have put everything in the public domain', Hotez explained, 'we want to maximize the likelihood they get used in low income countries'.

Every act of compassion and empathy is an act of sacrificing the small self in the interest of the larger one. 'We who lived in concentration camps can remember the men who walked through the huts comforting others, giving away their last piece of bread.'[16] Viktor Frankl's poignant reminiscence illustrates a human being's capacity to make the highest sacrifice despite the most terrifying circumstances. To put at risk one's own life for the welfare of another reveals rare courage and nobility of character. It must result from the realisation of our underlying oneness.

So our struggles for a life full of purpose and consequent everlasting happiness hinges on refining our experiences by sacrificing sole self-interest and moving closer to the source of our absolute well-being. Swami Ranganathananda writes: 'Where there is no *buddhi* (discernment), we live and work from a lower level of life. Then we become a *phalahetavah*—"motivated by fruits for oneself". ... Compared to that, all thought and action proceeding from the level of *buddhi* will seek the welfare of others along with that of oneself. ... *Buddhi* has only to turn back, the Atman is there, the infinite one.'[17]

In his poem *Paracelsus*, Robert Browning describes this 'infinite one' as the *imprisoned splendour*:

> There is an inmost centre in us all,
> Where truth abides in fullness; and around,
> Wall upon wall, the gross flesh hems it in,
> This perfect, clear perception—which is truth.
> A baffling and perverting carnal mesh
> Binds it, and makes all error: and to *know*,
> Rather consists in opening out a way
> Whence the *imprisoned splendour* may escape,
> Than in effecting entry for a light
> Supposed to be without.[18]

If there is at all a possibility of a *permanent* end to our problems, it lies in being as expansive and as inclusive as the Internet that we have created—in being curious about our internal nature as we are about external nature—in exploring, understanding, and *allowing the 'splendour' within to collapse separateness forever.*

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Vedic Philosophy and the Knowledge Economy

Dr Krishnamoorthy Subramanian

Knowledge Economy and Its Binary Nature:

Knowledge economy (KE) in the 21st century can be defined as follows: 'Economy which is increasingly based on knowledge-intensive activities, creating a greater reliance on intellectual capital rather than physical inputs.'[1] Knowledge is an intangible asset. Yet aggregating and leveraging that for new and higher value addition is the driving force behind the Knowledge Economy. As human beings, we contribute our efforts in economic activities through our:

- Knowledge and its use (A),
- Ability to collect and process information (B), and
- Through our Physical effort (C).

While the use of information and labour are required in any job or career, the demand for value addition through Knowledge and its use has been increasing in the *Knowledge Economy*. We can describe the value addition (VA) in the knowledge economy as: VA = A / (B+C). It is schematically illustrated in Figure 1 (see page 179), where we observe two pathways for economic progress:

1. Increase the contribution to knowledge content and its use: higher values for the numerator.
2. Use knowledge based solutions while reducing the effort expended in 'information processing' and 'physical' work: lower values for the denominator in the above equation.

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IMAGE: HTTPS://WWW.SCOONEWS.COM

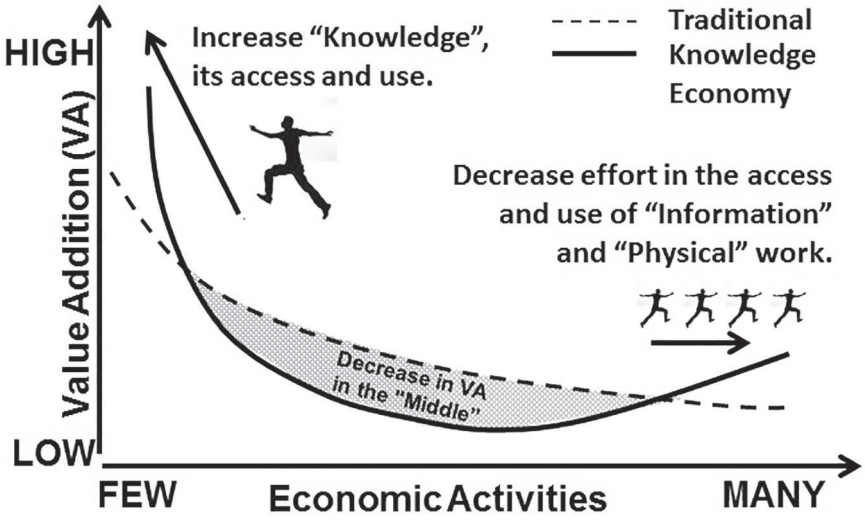


Figure 1: Knowledge Economy: Two pathways for higher Value Addition with a decline in Value Addition in a large segment of 'Middle' level economic activities.

IT tools and their applications have catalysed 'Globalisation', thanks to the ready access to information and a large pool of low-cost labour and all other resources across the globe. Acceleration in the use of digital technology is now creating new knowledge-intensive fields and developments such as self-driving cars, genomics, data science, 3D and smart manufacturing, health care solutions, unmanned warehouses, and space travel among others. These are enabled by a few highly talented and skilled 'knowledge workers' across the globe. Through this combined effect of digital technology, a large segment of the economic activities traditionally considered as the 'middle' are now seen as adding lower value relative to activities in the above two extremes or pathways[2,3] This in summary is the 'Knowledge Economy' (KE). This development is true for all enterprises, sectors of activity or the national economy! In this KE, there is increasing demand for knowledge workers in a diminishingly smaller pool of well-paying jobs and careers. Workers who contribute only marginally to knowledge work are not considered very valuable.[4] This shift is true for developing economies as well as advanced economies.[5,6] This shift may be accelerated by growth in Artificial Intelligence (AI) and Robotics! This seismic shift in the nature of work, job opportunities, and economic activities in the KE will require a radical change in thinking and new knowledge based skills for everyone.

Shift in Thinking Required in the Knowledge Economy

Progression from 'physical labour' to 'information work' and moving into new 'knowledge intensive work' has been the pathway for economic progress for individuals as well as families for generations. In the KE, this orderly and seamless progression in opportunities seems to be broken. In the KE, only a few Knowledge workers in any company or in the population are well off measured in financial terms based on their high value addition. At

the same time, a large majority see their economic standards slipping away. This is not a sustainable situation for peace and harmony for all. While a few across the globe enjoy the benefits of industrial advancements, their impact on ecology and climate affects every person—indeed all living and non-living objects on the planet earth.

How do we rebalance this affluence and benefit for the few at the expense of the many? The required changes cannot come unless there is a shift in our thinking from purely material comforts and financial measures to a holistic view of well-being for all. This is where the Vedic guidance, '*Sarve janāh sukino bhavanthu*; may everyone live in peace and harmony', acquires profound and practical meaning. This mind shift is required in each of us as individuals and collectively as a community and the society. This responsibility is even greater for knowledge workers who preferentially benefit more than others in the KE.

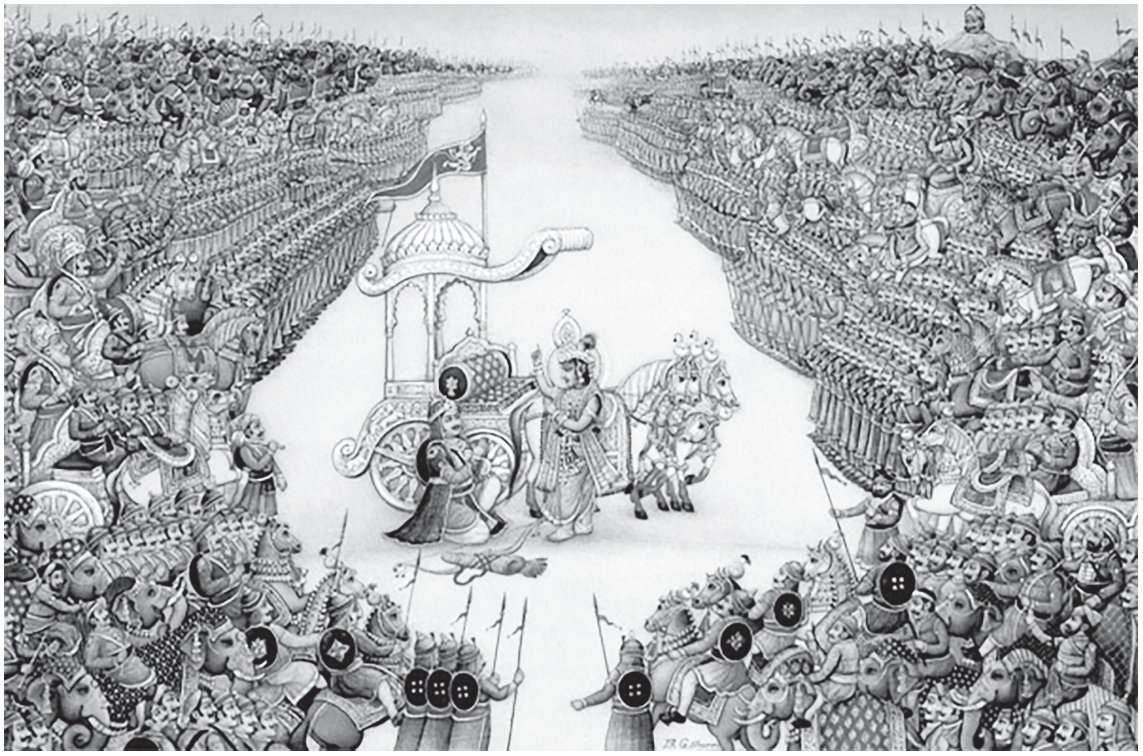
KE is empowered by instant access to information for everyone powered by digital news media, search engines, and social media. This empowerment in turn may populate negatives faster than positive stories, thoughts, and ideas. It requires a determined effort to fight off our subjective negative impulses, which in turn lead to isolation, self-selected groups, bias, bigotry, and depression. This attraction to negative news and the negative tendency is assessed to be more personal in nature rather than universal.[7] It requires a clarity and understanding in each of us on *Subjectivity* vs. *Objectivity*. It also requires persistent clarity of thought and managing our mind to seek the truth all the time in all that we watch, read, and absorb through an internet search and social media tools such as WhatsApp, FB, TV, Twitter, and so on.

The above discussion, even while it is brief, raises some serious questions: What is true knowledge? Can that be universal and applicable in every field even in the face of increasing 'specialisation'? How can we acquire that universal knowledge for success in the KE? What is Objectivity? How can objectivity and non-attachment be developed as a protective armour and tools against the barriers imposed on us in the Knowledge Economy?

Universal Lessons from Vedic Philosophy for the Knowledge Worker

Every knowledge worker is a 'professional' as well as a 'philosopher' in a limited context. For example, every doctor or surgeon is supposed to observe the patient unattached and objectively—without personal attachment to the patient—based on all available evidences. The next step: prescription of medicine and treatment or surgery is what he or she is required to do (duty or *dharma*). Also, he or she should perform that without any undue expectation for the results. Yes, the goal is to see that the patient gets better. But a good doctor or surgeon is not burdened by the outcome. The same is true for an engineer, scientist, teacher, mechanic, accountant, supervisor, manager, author, cook, and so on in his or her respective professions. A carpenter chooses the best wood based on his knowledge (and the laws behind their use such as strength, flexibility, and durability). He is happy to sell the furniture he made and move on. He is not attached to each piece of furniture he makes obsessively! From the above, it is obvious that each knowledge worker at his or her best level of performance lives by the guidance from Bhagavadgita (2.47), which can be explained in the modern idiom as follows:

> Do your duty, the right thing to do based on your best understanding and objective analysis.



A traditional painting depicting the preaching of Bhagavadgita during the Mahabharata war

IMAGE: HTTPS://WWW.HINDUGODWALLPAPER.COM

> It is the only thing left for you to do! Don't be fixated on the outcome. Yes, there is always a goal and purpose. But let the result, whatever it is, happen as a result of your performing your duty. Don't belabour on the possible impact of the results or the outcomes. You, the physical person are not in total control of everything; have the mindset to be flexible and adaptable rather than rigid and inflexible; don't let the mind wander in fantasy or self-inflicted grief. Do not shy away from your association or engagement from what you are supposed to do, that is, your duty.

If the goal for anyone in the KE should be to prepare oneself for jobs and careers, which are knowledge-intensive, then it raises the question: What is the 'true knowledge' required? Most people assume higher education as the answer! Higher education is believed to open the gateway to better, higher-paying jobs.[8] Is college education by itself adequate to gain the 'knowledge' required for sustainable jobs and career growth in the KE? Without clarity on this, workers and their employers are required to be innovative, entrepreneurial, work smarter, work harder; jump from job to Job, become global, seek higher education; interdisciplinary, and so on.

'Getting the job done' is valued highly at any time. KE requires this skill to define what is the job or solution that is new, that needs to get done; why is that important; what is the knowledge required for that solution, and the like; and then relentlessly work to make it happen. This is system thinking.[9] This requires the knowledge worker to think holistically. When asked '2 + 2=?' one should never

answer '4' instinctively and impulsively! Instead, probing into the question—why it has been asked, the details behind the question, and the comprehensive solution relevant to that question—is what is needed! Then it requires transformational skills to execute that solution efficiently and collaboratively with everyone involved.[10]

The system thinking and the related transformational skills described above mirror the knowledge and approach described in the Vedic Philosophy (summarised in the Gita, chapter 14):

- **Always take the time to reflect before engaging in any action.** It requires:
- **Patience and perseverance to gather all observations** (lend a patient ear; listen carefully and with kindness, study, observe, collect all data as much as possible).
- **Focus on the primary invisible driving force (the knowledge) behind the solution.** Experience and its disturbances tend to distract the self and others into the myriad of data and observations as well as from one ad-hoc target to the next endlessly.
- **Emphasise on the application of the 'Science of Connectors'.** All our data and observations are the connections between the knowledge (the driving force) and everything external to it (the team, resources, analysis, signals, sensors) through the three connectors or ropes (*Guna*): *Knowledge*, *Bias* and *Ignorance* and their equilibrium states: Inertial, Turbulence, and Tranquility**.** *Inertial* state leads to procrastination. *Turbulence* leads to an unending series of actions without the ability to meet the ever-changing needs or demands. *Tranquility* leads to clarity on 'Why?', a collective sense of purpose, as well as a common understanding of the laws (knowledge) governing the solution and an ability to arrive at it efficiently since the connection between the data and the knowledge (driving force) is now clear to everyone!
- **Let this reflection lead to Objectivity** (seeking balance through the ever-present connectors as best as one can) **over Subjectivity** (impulsive responses through tasks and actions, unwittingly choosing actions based on presumed knowledge, whims, bias, and ignorance).
- **'Externalise' the subject matter and analysis.** Look at the subject matter, experience, and the analysis in a detached and impersonal manner, that is non-attachment**!**

Every knowledge worker, to be successful, needs to practise the above 'philosophy' as basic knowledge or foundation! Whenever we engage in this manner of reflection and analysis—through non-attachment, objectivity, and the science of connectors—we are freed of self-limiting issues and concerns. On the other hand, since the focus is directed towards the solution by the same pool of knowledge and understanding, work becomes a collective output of everyone and is not driven by personal attachments and preferences. Working with anyone becomes natural even if he or she is far away across the globe. There are no strangers, no specialists, no silos, no 'other'!

'Science' has a pre-eminent role in the KE. It attempts to answer the 'Why?' question or the invisible governing forces that enable the phenomena of nature. Gravity, magnetism, electricity, buoyancy, life processes, optics, chemistry, biology, friction, nucleation, crystal growth, heat transfer, and the like are a very small list of the infinite number of phenomena of nature known and unknown that we seek to use and exploit in the KE. Science is an attempt to understand the invisible enabler and find laws

to better explain or understand their presence in the cognitive world.

Every knowledge worker is a specialist in the laws of nature pertinent to his or her field. Vedic Philosophy teaches us that the ideal person is an objective and relentless observer who is in the state of *Brahman*, supreme governing force as evidenced through the invisible laws of nature and their visible effects.

Knowledge workers have to internalise this thought since their work exists enabled by and as a witness of the invisible forces of nature and their influences, even though limited to their field of activity.

Knowledge workers have to be always open minded and willing to change their knowledge and understanding based on new evidence and their objective analysis. Any subject learned with the above knowledge framework becomes far more comprehensive. Such education, knowledge, and practice are useful to the professional in a wide variety of situations and opportunities. It allows the ability to open new doors when none seemed to exist before!

Practice-oriented Vedic Philosophy for the Knowledge Workers

Barriers may exist in adapting the above universal knowledge from Vedic Philosophy. By treating 'Religion' and 'Philosophy' as synonymous, we may fail to see the role and practice of philosophy in aspects of our daily life outside the religious context. There is also a belief that philosophy and spirituality are for old age as they deal with topics for the afterlife! Vedic philosophy can be applied in every stage in life practised with *objectivity* and *non-attachment*. Under ideal conditions it aligns with divinity in action, reflecting the mindset as declared in the Vedic pronouncement (*Mahāvākya*) '*Tat Tvam Asi*; That Thou Art':[11] *Inclusiveness for all and exclusive of none*. This mindset requires a relentless focus on the larger context of life in contrast to the focus only on individuals, their tasks and actions surrounding them.

We may need early education on Vedic Philosophy and its practical relevance in all aspects of life along with sustained reinforcement through a lifelong learning process. A reflective mind rooted in Vedic Philosophy has to become a natural way of life for anyone independent of religion, age, proficiency in academic education, economic success, social standing, and affluence. Also, there may be no better substitute for self-education through reading, reflection, and practice with help from innumerable resources readily accessible to anyone in the KE.

It is not prudent to assess jobs and careers exclusively in financial terms and the material rewards. To maintain a holistic perspective on life and work is always the desirable path. This includes the power of Self-awareness as well as finding a limitless union with the universe at large. In the KE, this deliberately cultivated spiritual outlook and practice is a direct and imminent need for every knowledge worker.

Sustained learning on the basics of Vedic Philosophy and its practice will help us to explore our inner thoughts and feelings, and build an equilibrium or harmony within. It is said that a butterfly fluttering in Brazil can lead to a tsunami in Japan![12] It implies that even very small perturbation in any of us can end up as chaos for the group, team, family, or society. If we learn to address and help the hidden anxieties or worries in any of us, it is the greatest help for all of us! Conversely, anyone at peace and harmony interacting with others is like a seed that grows into a giant tree or a snowflake that gradually builds up into a snowball including everyone and everything in the vicinity.

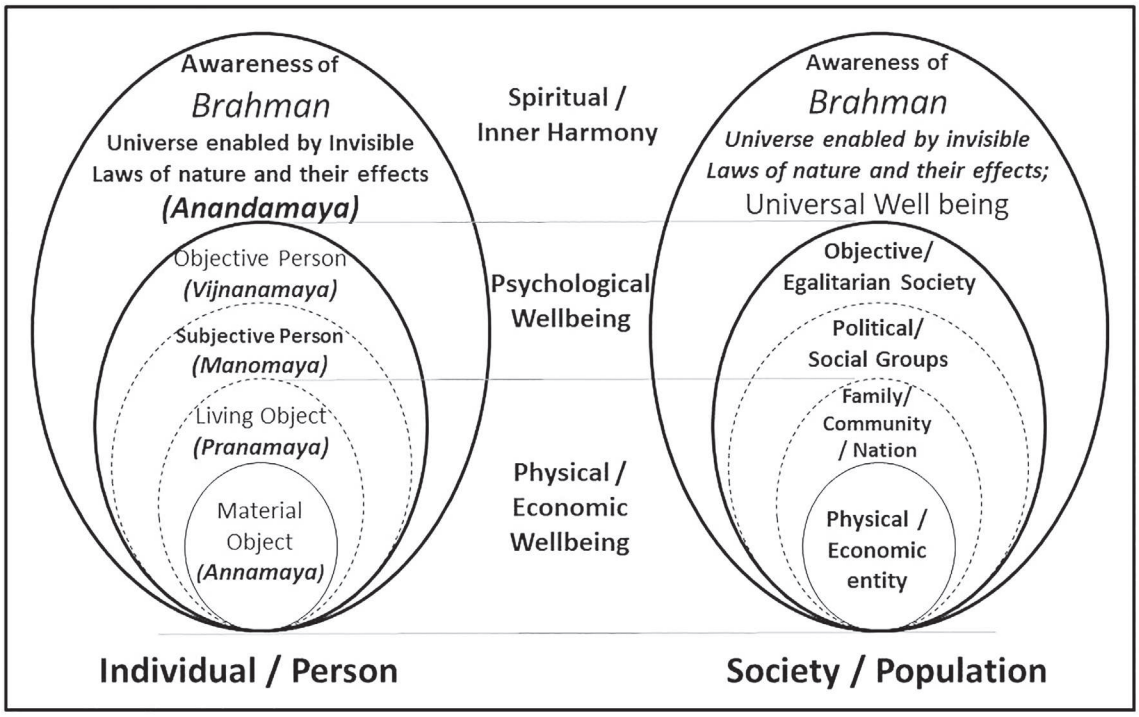


Figure 2: Five Layers (Pancha Kosha) applicable to each person and by extension to the society/population at large.

Practice-oriented Vedic Philosophy referred to in this section applies universally to everyone. But it is particularly needed for the Knowledge Workers who play an increasingly vital role in shaping the future of everyone and everything in the Knowledge Economy.

Knowledge Economy and Spirituality in Practice

According to Vedanta, each person exists in five interconnected layers or sheaths (*Pancha Kosha*).[13] These five layers are illustrated in Figure 2. These layers also align with the three dimensions as part of our existence: (a) Economic / Physical wellbeing (b) Personality or Psychological wellbeing and (c) Inner harmony or Spiritual wellbeing.

The large body of this essay has been devoted to clarifying the lessons from Vedic Philosophy that are pertinent for professionals seeking success and economic wellbeing in the KE. Understanding the role of the pertinent laws of nature and their deployment holistically, as needed in a system, is true knowledge for any knowledge worker. The ability to accomplish the larger intended purpose objectively and without attachment is the true hallmark of any leading-edge knowledge worker in the KE. Vedic philosophy also teaches us the ability to look at our interconnectedness across all the five layers illustrated in Figure 2, in any and all aspects of life. This expansive view is an important asset for Knowledge workers. Those who find a personal connection between the invisible laws of nature and their visible effects across the five layers in their field of work will also find it easier to extend such thinking to any other aspect of their lives. Figure 2 also illustrates how these

observations and their application can be extended for the family, society, or nation at large. It is beyond the scope of this essay to get into their details. But enlightened Knowledge Workers will find ways to see the connection between the five layers in their work or lives and how they translate into the five layers of the society or population at large.

Swami Vivekananda states: 'Service to humanity is service to God.'[14] In the emerging bimodal KE, with a collapse in the demand for the 'middle', paying attention to fellow human beings may be more than mere service. It may be the true display of divinity and the spiritual core in everyone. Enlightened Knowledge Workers with Vedic Philosophy as their driving force can become transformative in many ways. They can start with looking at each knowledge solution they work on, which enables their personal success and also also acts as a means to create new economic opportunities for a few more people that are near or far away and not merely as means to reduce employment of fellow workers in the name of efficiency and productivity.

Charitable work and Corporate Social Responsibility (CSR) can become part of the spiritual evolution in knowledge workers when they think of themselves as a droplet of water in a large body of water (individuals indistinguishable from humanity at large). We can see emerging models in Social Entrepreneurship, Charitable Foundations and Awareness campaign fostered by successful Knowledge Workers. Enlightened Knowledge Workers can transform social media tools as enablers to propagate social harmony instead of polarisation, bigotry, and bias. Climate crisis, eliminating hunger and poverty, clean water, energy, decent living conditions for all, reducing racial tensions, eliminating gender bias, and the many other challenges need not remain as crying calls limited to a few activists and their action groups. Instead, they could become the targets for new solutions for every knowledge worker in all organisations. If successful, expanding their knowledge in Vedic Philosophy for spiritual evolution and wider impact may indeed be the lasting role of knowledge workers with their preferred status in the KE.

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When Virtual gets Real: Screening Life in Digital Era

Kanchan Gogate

Introduction

Life moves at our fingertips, literally! The day begins with unlocking our mobile screens for most of us. Twitter feed reminds us what news has taken the internet by storm. Sans social media, we are *out of reach*. Alexa is our dependable mate. Google maps can take us right to the destination. While automation and artificial intelligence would be navigating our lives in the years to come, it is pertinent we steer the control keeping intact our innate intelligence. Technology is a double-edged sword where its reach is penetrative and far-reaching, yet alarm bells are ringing that its impact on mind, brain, consciousness, and quality of life must be vetted.

A meme illustrates our real problem in the digital world. When ordering becomes part and parcel of life for a teenager, he orders a bottle of water. His mother is shown reminding him that water ordered virtually needs 'actual' drinking! Ordering can be online but eating must be 'real'!

As our 'actual' problem in this technological era is not just limited to digital addiction, this article tries to review what it means to live in a time where life is technology-driven. *Screen time is not merely limited to the time we are using gadgets but it is impacting our minds, bodies, and quality of life even when we are offline*. Excessive

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IMAGE: HTTPS://MAHARASHTRATIMES.COM

screen time is leading to depression or isolation. It is resulting in lessening the attention span in kids and adults. In turn, there is a disconnect not just between humans but also with our true selves. Interacting with the experts in the field like digital de-addiction counsellors, psychiatrists, and spiritual masters, this article explores the possibility of restoring our connection with our true self, discerning it from the digital self.

Lockdown Unlocking the Screen Addiction

The advent of computers had already started digitising our systems. For the last two decades, computers have made inroads into the schools of even the remotest rural areas in India. Despite the smartphones and laptops at home, lockdown imposed owing to the pandemic has unlocked our screen addiction problem as adults are working from home and even kids are virtually being schooled.

Newspaper reports and surveys indicate the rising problem of screen addiction in this period. A report from *Childline*, a 24-hour helpline for children in distress, and two de-addiction centres in Pune, Muktangan and Anandvan, indicate that there has been a major increase in the number and severity of addictions.[1] The report says that college students are also addicted to web series. Gaming addiction has been noticed in the older generation, mostly among working professionals. It adds further that the addiction age has gone down where even 6-year-old children are also being glued to the screen, the report adds further. This survey has collected the data between March 2020 and March 2021, the lockdown period.

Another study, 'The impact of Covid-19 lockdown on internet use and escapism in adolescents', published in the Spanish journal *Revista de Psicología Clínica con Niños y Adolescentes* compares the use of the internet among adolescents in pre and post lockdown periods. It states:

> Results show that adolescents generally have increased their use of social media sites and streaming services. Further, those who scored highly on gaming addiction, compulsive internet use and social media use also reported high scores of depressions, loneliness, escapism, poor sleep quality and anxiety related to the pandemic. Our findings indicate that, regardless of country of residence, the Covid-19 outbreak has had a significant effect on adolescent internet use and psychosocial well-being. The need to address pandemic-related distress to reduce the effect of maladaptive coping strategies is highlighted.[2]

Senior columnist Kaushik Deka, in his article '*The burden of gen-Covid: How students are coping with mental stress*', takes up this problem. His article opens with statistics on the plight of the children in lockdown globally. He quotes United Nations Children's Emergency Fund (UNICEF) report, which says that one in every seven children, or 332 million worldwide, has lived under a lockdown for at least nine months, making them vulnerable to mental health issues. He links this mental stress considerably to everything moving online, and kids and adolescents being locked up in the confines of home. 'Last year, a survey conducted by the Delhi government among parents of children aged 5 to 15, saw 54 per cent parents admitting that, on an average, their children's daily usage of smartphones and computers had gone up by five hours', he says in the article.[3] Deka raises the fundamental question of parenting in the digital age besides alerting us on how unchecked usage of the internet can make teens vulnerable to screen addiction, cyberbullying, and exposure to pornographic sites.[4]

Above all, experts feel that these few representative examples are just the tip of the iceberg. It is because we need to see what happens to the generation that starts schooling online as the first experience.

Screen for Unwinding: A Problematic Solution

Why are we glued to the screen? Is it just work? After working on the screen, we take to social media or gaming or a web series online to unwind. We open tab after tab and get into a vicious circle. De-screening can destress while using the screen as an unwinding end in distress. While adults can at least discern or identify something is wrong, pre-teens and teens cannot recognise the problem itself, let alone from gauging its depth. Sonali Kale, psychologist and counsellor working with Pune-based *Muktangan* de-addiction, now regularly handles screen addiction cases. She says that the normal definition of addiction is when it is something you cannot do without. When the screen becomes not only indispensable but compulsive, it is a sign of addiction, Kale says. Outlining the problem, she elaborates:

> With schools moving online, the problem of screen addiction strikes earlier, even at the age of 8 or 9. Over a period, while schooling kids start parallelly chatting, social media or gaming. They click on any tab out of curiosity. It becomes an addiction when they spend daily almost five hours on screen unmindful of food, sleep, and daily routine. We notice that screen addicts do not register what is being spoken to them. I have been handling almost 8 to 10 cases a week of screen addiction in teens and pre-teens.

Kale says that in an online interaction what is missing is eye contact. 'For example, if a teacher is teaching human anatomy, in a classroom environment, it is in a scientific language. But eye contact and the physical presence of the teacher is missing. If students google something out of curiosity, tabs open one after another and gradually that can be the beginning of porn addiction.'

On social media, Kale says children build their world online. They want to project that their life is happening and nice. Amid projecting online image, kids get disconnected from reality. Social media engrosses them and they are hooked to it because there is only a goodie-goodie world with no one to judge. Lockdown enhanced the chances of addiction because everything has moved on the screen.

Kale says that the screen addiction problem in teens can normally be addressed in a few counselling sessions. Kale opines that if we give responsibility to kids to monitor their own screen time and explain to them the pros and cons, kids get convinced. 'In teens and pre-teens, the emotional brain is developed whereas the logical brain is developing. Therefore, their response can be more emotional. We can explain them not to get emotionally carried away but parents need to have a patient outlook. While communicating with youngsters, the tone should be friendly and not authoritative or advisory', she adds further.

According to Kale, the problem is not however confined to teenagers. Working professionals who are operating from home and even senior citizens are falling prey to gaming, web series, and social media. All in all, irrespective of the age group or gender, most of us seem to be taking to the screen for unwinding, entertainment, and that itself leads to stress. *Internet technology has been a solution to constraints of location and time, but lack of poise seems to make it a problematic solution*.

Productive Screen Time: A Practical Approach

Some experts and counsellors stress taking a 'pragmatic' approach than taking a positive or a negative one. All of us agree that we cannot take out the internet from our lives, but at least we can explain to kids its great benefits and warn them about its loopholes. As the human mind doesn't work with negatives, counsellors advise that we must monitor how we are spending our screen time, what are we watching, and use it with poise.

Mukta Chaitanya, a journalist and author, has written a book called '*Screen Time*' in English and Marathi. It is high time kids and parents understand that technology is for us and we are not its slaves— this forms the basic premise of the book. She wants to initiate a dialogue about it instead of just giving children a diktat about screen usage. She feels that as we cannot take out the internet from our lives, we must talk about how we are using cyberspace, its risks and security measures. On why she felt the need of writing a book like this, Mukta says:

> If we don't alert kids on time, it's a dark web where we cannot leave them alone. And if parents or adults are not educated about it, we would also be groping in the dark. There is a section for kids and parents in the book. Instead of talking just negatives, examples have been given about children doing something constructive and breaking the internet. We should be net-positive and must use it with awareness and poise.

The book talks about challenges in surfing, gaming, subsequent problems of teenagers et al. More importantly, it talks about what you can watch on the Net. It also gives examples of 12-year-old Master Chef like Julian Frederick or how to learn a new language on the net or some Do It yourself (DIY) for kids. Mukta feels that parents should be 'educated' in the right sense about cyberspace. 'A dialogue with kids on why there should be a timeline on Net usage, right to privacy and using the internet positively is needed. First, we need to accept we cannot keep kids net illiterate and can't let them get lost in it. We must walk with them in cyberspace with caution', she adds.

Discriminating between good and bad screen time is essential, opines Anagha Lavalekar, Director, Jnana Prabodhini's Institute of Psychology, Pune. She further adds:

> Exposure to net starts very early nowadays. Even today's youngsters, say around 25-years-old, got smartphones after schooling; but now, it starts right as the first step of learning. Now, we must accept we can't avoid net exposure. It can lead to addiction at any point. Addiction can land them into loneliness or depression. Again, restlessness and aggression can be the outcomes of digital de-addiction. Parents must lead by example and devote time for kids. Parenting in the digital age needs personal involvement of parents like reading storybooks with them, taking long walks, or doing pottery, art and craft with them.

Warning signs of digital disorder

- Preference to a digital device for leisure over other hobbies.
- Progressively increasing awake time spent on digital devices.
- Unable to control the amount of time spent on using the device.
- Withdrawal symptoms like irritation, restlessness, feeling uneasy when there is inability to access device.
- Continuing to use excessive screen time in spite of realising its negative impact.

Digital Disorder and Mind-Body Medicine

Digital de-addiction is a fact of our lives and psychiatrists, of late, have been observing it. However, that has not yet been classified as a disorder, informs Dr Nischol Raval, Consultant Psychiatrist, Convener, IPS Task Force on Mind-Body Medicine.

Dr Raval also brings our attention to something called *Google Syndrome*, a term popular with doctors. Patients google symptoms and conclude the treatment before the official diagnosis. In turn, they may not trust the diagnosis of a doctor. Patients keep changing doctors in the process. 'For example, if a person is suffering from headache, he may already conclude that it could be a brain tumor. The doctor may diagnose it as migraine after necessary tests, yet a patient may demand further investigation. This has an impact on doctor-patient trust and leads to anxiety in patients', he says.

There is growing evidence to suggest that increasing screen time is associated with many mental health ill-effects. There are neurochemical and biological changes in the brain associated with increased screen time use, in addition to the psycho-social impact it has on the person. About his experience of handling the cases of digital de-addiction, Dr Raval says:

> In my practice, I regularly come across persons who suffer from either of these difficulties or a combination. Following a thorough assessment of their physical and emotional issues, we devise a management plan. This requires making them aware of physical health issues and help them assess emotional health. They may need appropriate medication for anxiety and depression. This can be addressed with yoga, meditation, mindfulness therapy, physical exercises, behavioral therapy, and nutrition.

The Mind-Body Medicine (MBM) can make a difference to digital de-addiction, agrees Dr Raval. MBM is an evidence-based, participatory, pragmatic, self-care approach, that combines the power of traditional knowledge of yoga and meditation with modern psychology and medicine. 'Much of these learnings have evidence from the recent advances in Neuroscience. MBM not only helps us in understanding the harmful effects of stress and behaviour problems like digital addiction and increased screen time, but also provides a framework for their treatment', Dr Raval says.

The Real and Digital Self: Spiritual Outlook

The impact of the digital revolution on the human brain is being studied and researchers are keen on it. It is just a beginning as they say, because, in due course, complete automation and digitisation are going to impact our brain in many ways. Internet might be changing our cognition. Artificial intelligence is far more superior and competent than the human brain. So how do we distinguish the human brain from the machine? It is consciousness that makes all the difference and modern consciousness studies are trying to study consciousness as an experience beyond the brain. We should note that our ancient Indian texts study consciousness as the very essence of our being, beyond material process.

Swami Sarvapriyananda, Incharge Minister of Vedanta Society of New York, at various prestigious platforms across the globe, has been talking about Advaita, non-dual consciousness, and

IMAGE: HTTPS://FOSSBYTES.COM

the hard problem of consciousness. He stresses the fact that our true identity is witness consciousness whereas our mind-body are objects through which we take in consciousness experiences. Therefore, consciousness can never be reduced to matter. This realisation of the pure self can help us transcend suffering, he says.[5]

We should have a *Dharma solution* to the problem. We must revisit dharmic values as they are timeless and will be our guiding principles in the digital era, avers Swamini Brahmaprajnananda Saraswati, contemporary teacher of traditional Advaita. She says:

> Dharma, Artha, Kama and Moksha are defined as Purusharthas, goals of human life. But when Artha and Kama become primary goals, somewhere there is a problem in balancing life's wheel. Where does one draw the line when it comes to Artha and Kama? Intolerance and indiscriminate violence in societies and global warming are inevitable, if Dharma as the universal framework of values is not central to our lives.

We must rediscover the value of Dharma, which is the practice of values such as truth, justice, and compassion that makes our life meaningful. It is common sense, which religions confirm as ethics, Swamini feels. She says:

> Dharma is wrongly understood, we must ensure we get it right. The practice of *tapas*/discipline, a subset of dharma and Satya is also on a decline. The digital world is dynamic and life is almost in auto-play mode. GenX needs to have the maturity to understand using social media with balance. Here, Parents must lead by example and help children draw the line. The virtual world takes you away from functional reality. *How can we understand the true self if we are disconnected even from that functional reality?* Reemphasizing dharmic values is a way forward.

Offering a solution, Swamini says that we must not allow ourselves to get manipulated by artificial intelligence. She further exhorts:

> We must be ruthless when it comes to how we use our time. Tapas or discipline is a qualification to learn Vedanta or any other spiritual discipline. *Aparigraha* talks about not taking what is not yours. However intelligent or qualified, Time is the only resource that we can never get back once it's lost. The pertinent question for us—*Is social media or web series improving the quality of our life?* How much entertainment is good enough? Let's also ask a question to ourselves—what is the change you want to make in this world? The way we answer these questions will guide us towards discipline and a life of contribution. We don't want a productive age group from 20 to 60 to get lost on the internet. Therefore, the practice of *swadharma* is necessary. Again, a digital detox is a byword now. We are talking about mindfulness practices but they are all deeply rooted in dharma. PB

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What Remains?

Srinivasan Raghuraman

When I think about the phrase '*Living a Meaningful Life in a Digital World*'—particularly in the context of the currently ensuing pandemic, which has rendered, for many of us, life in the past year to have been in, essentially, the digital world—a few thoughts come to mind. Indeed, one needs to ponder much about what it means to live a *meaningful* life, period. But, a specialisation of the problem is always known to help students arrive at a solution. And so, let us begin.

First, what did the so-called specialisation entail? Alternatively, what do we think about when we say '*digital world*'? Surely, the answer to this question would depend on several factors, but I will fix one—the time of asking the question—and I shall fix it to *now*. From a quick poll involving a few of my friends and colleagues, I can say with reasonable confidence that for many of us, the term refers, somewhat negatively, to a siloed arrangement devoid of the bountifully precious human interaction that not only facilitates many of the activities that comprise our livelihoods, but additionally enhance, somewhat non-trivially, the overall gait and experience of our day-to-day lives. And indeed, the past year has proven difficult in terms of all forms of direct human interaction being actively discouraged (for obvious safety reasons) and all communication being reduced to staring endlessly, if not tirelessly, at a screen, which, if we happen

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IMAGE: HTTPS://WWW.COMMUNIZINE.COM

to be so lucky, would show the face of the person whom we are talking to. I must say that I completely understand and agree with the woes of my friends, colleagues, and, I am sure, many, many people the world over. 'We used to be able to meet and have a cup of coffee and chat about our lives, but we haven't been able to over the past year.' 'There's nothing like meeting someone in person.' 'I wish I could meet the people I worked with.' And so on and so forth. Of course, the pleasure of social and human interaction is fundamental to us. Indeed, human is said to be a social animal. One could even argue from an evolutionary biological standpoint that being isolated or alone has been discouraged for, although this no longer applies now. Historically, if you were alone, the chances that you would survive would be lower, and so, one did what one had to do in order to *stay with the pack*. While so much is different, even when we think of the digital world—you are not really alone, for instance—on account of the fact that we are wired to strive for intimacy—social and otherwise. Isolation, while not literal, is still pretty capable of evoking rather negative emotions in a person, if the person simply didn't know the so called 'otherwise'. Harbouring such negative emotions, in my humble opinion, does not constitute living a meaningful life.

Bottom line, yes, we have not been able to meet in person, talk in person, watch movies, go on fun trips, go to the temple whenever we wanted to or needed, and the like. I don't think anyone can question any of those sentiments. I, however, urge you to ponder the following: We spend quite a bit of our time thinking about all those things that we have not been able to do. All those limitations have been imposed upon us by this so-called digital world. But what remains in this new world? What are those things that we can still do? I believe that the more we think about this, the more likely we are to be rid of the aforementioned negative emotions and also live a happier and more meaningful life.

At the outset, I must say that the first and probably most important thing that still remains, again, in the context of the ensuing pandemic, is *our ability to help others and ourselves*. Whether that means staying at home and checking in with friends and family, wearing a mask when going outside, volunteering help, donating, providing emotional support, or even simply praying for the welfare of all. That very core of this very existence of ours still remains. I must stress at this juncture that I do not mean to say that people do not do this. Of course, they do! However, the focus of many remains, not on these aspects, but on the limiting changes that this digital world has bestowed upon us. And this is the point I would like to make. In general, I believe that we are predisposed to focus on what is not rather than what is. While this may seem pedantic and annoyingly equivalent, I do believe that the emotional responses these questions and their answers evoke are fundamentally different.

Again, such a predisposition may not entirely be our doing. One could argue based on evolutionary reasons for this as well. However, one could also say that, for evolutionary reasons, it is our duty to correct this predisposition of ours. *Focus not on what isn't but on what is. Not on what was not but what was.* Not on what won't be but what will be. Not on what one cannot but on what one can. Not on one's limitations but on one's strengths. Not on life's sorrows but on life's joys. Not on what has gone, but on what remains.

Indeed, I am not trying to paint the picture of the ideal callous individual who cares not for any faults and simply revels in the simple pleasures. No, definitely not. There is no doubt that

change and action are irreplaceable in many contexts. There are many, many verses in several ancient texts—the *Gita*, for instance—which echo this sentiment. I am simply suggesting that brooding over the negatives may not be the only possible motivation to turn them into positives. Love something for what it is, what it was, and what it *can* be.

So I urge you to think—what, do you think, remains? What is it that in your life continues to persist in this digital world? Worry not a moment for the many things, I am sure, we have all lost as a result of this *new normal*. Consider what it is that we haven't.

An interesting aspect of this question—what remains?—to me, is that everyone inevitably considers it all the time, regardless of their awareness of it. Albeit in a somewhat different spirit, I would still like to dwell on this aspect of this question. Consider that many, at varying stages in their lives, ponder the *purpose* of their existence, their role in this macrocosm. Even those who are so lucky to never ponder about it are still held in its clutches. For, it is this so-called purpose or the notion of it that seems to guide the thoughts and actions of all of us. What is interesting is that the everyday understanding of this purpose seems to be very related, in some sense, to the question: *what remains?*

At some stage in life, a human becomes aware and conscious of the lock that mortality is, as well this notion of a purpose that seems to be the key. In a very broad sense, at the level of the individual, the purpose seems to revolve around leaving something behind, that outlasts the mortal being. Our world, deconstructed, is one that we perceive through our five senses and enhance with the nuances and intricacies of our mind. Most believe that it is their purpose to leave something behind in their world. Perhaps a large family who will remember them fondly for generations to come. Perhaps something tangible like wealth, property, say for their loved ones. Perhaps something intangible such as fame. And so, the answer to the question—what remains?—must then be one or more of the many such things people leave behind, right?

Well, yes and no. Yes, indeed, such things could outlive the being itself. But do they really *remain*? Indeed, all those things I mentioned above and probably many of the examples one could think of with regards to the exposition above do not truly *remain*. For they are all subject to change, and hence perishable. Memories fade. Wealth diminishes. Fame is fickle. And so, I come back to the same question again—*what remains?*

Hopefully, by this point, I have convinced you a little more regarding why it might be a useful exercise to think about this question. Firstly, you have probably already thought about it, even if slightly differently. Secondly, the answers that you might have come up with might not have been entirely satisfactory to you. And finally, focusing on and answering this question well could really help in leading a more meaningful life.

As a final reflection to draw upon, I must point out that this question has buried inside it the potential for leading, not just a more practically joyful life, but, a much deeper, spiritually stronger and meaningful life. Let me draw your attention a little closer to the word *remain*. A tiny two-syllable word, it packs within itself a host of implications. Most notable among those implications is TIME. Let us take a closer look as to why this is the case. Indeed, for something to remain, firstly there must have been something else that did not remain. Secondly, for that something else to not remain, that something else must have been in a state of *being* for some amount of time, and then, at some other point of time, transitioned to a state of *non-being*.

Among the many concepts that are brought to life by this one word, the notion of TIME is the one that is the key.

But what is TIME? The *Narayana Upanishad* says: '*Kālaśca Nārāyaṇaḥ*; Time itself is the Lord.' Of course, one could say that one is playing it fast and loose in understanding the word *kāla* simply as TIME, but I would like to humbly pledge that the two are, at the very least, related. Assuming we are subscribing to this notion, something seems amiss. For isn't TIME part of this world of ours which we distinguish from the likes of the higher TRUTH, that is known by many names, one of which is *Nārāyaṇa*?

To address this issue, I would like to distinguish TIME from the so-called passage of time. When TIME is perceived as a causal agent, the passage of time is the experienced effect. And this experienced effect of the passage of time effortlessly induces many more effects that we experience in this world of ours, such as an object coming into *being* from a state of *non-being* and then returning yet again to a state of non-being. In fact, our remedial understanding of the word *remain* can, in some sense, be seen as yet another effect induced by the experienced effect of the passage of time. Note that crucial to this experienced effect of the passage of time is the aspect of TIME itself being a causal agent.

And now, let us revisit our question again, one last time. What remains? And aha! Notice how careful I was in phrasing the question right at the beginning! It wasn't—what remained? It wasn't—what will remain? *The question seeks as its answer that which has remained, will remain, etc., somehow independent of the TIME at which it is asked*. So what is it, the answer to this question, that seemingly necessitates thinking of the passage of time to even understand it, and yet, eludes the notion altogether? That, my dear friends, is TIME itself. That is *Nārāyaṇa* Himself. For *Nārāyaṇa* is the one without a beginning, without an end. *Nārāyaṇa* alone remains.

In fact, He remains in a very real way too! He remains in our hearts. He remains hidden and embedded in everything around us in the world, no matter digital or not. The world and the many things in it may take many shapes and forms through the divine play of *Nārāyaṇa*, with the passage of time, which is the sheer reflection of TIME in the mirror, that is, this world shrouded by *Māyā*. But in all of those things, in all of those many shapes and forms, we will always see the reflection of that one TRUTH that is *Nārāyaṇa*. It is indeed *Nārāyaṇa* Who remains. And now it makes all the more sense to dwell on that TRUTH that remains. For how much more meaningful can life get when one constantly ponders on He who remains! I leave here a verse (self-composed) on this notion along with its translation.

शेषः कः प्रतिवाक्यमस्य हि गभीरन्तर्ह्यनायासमप्य-
-र्कस्यातपपूर्णकीर्णकिरणैस्विन्नश्शशाङ्को भवेत् ।
कालस्य प्रतिबिम्बबिम्बपृथिवीपूर्णावृते मायया
शेषोऽहङ्कलु काललोललनात्मुक्तस्तु बिम्बो ह्यहम् ॥

Who remains? The answer to this question, while profound, is also extremely simple.

Just as it is by the Sun's glorious, resplendent rays that our Moon comes into existence,

I see, as the reflection of TIME in the mirror that is the earth shrouded by *Maya*,

Myself, as that which remains, free from the play that is the rocking of TIME.

Thus, as promised, the specialisation of the problem has helped us gain many insights into a far more general problem. And so, with our many thoughts set on that which remains for us in this digital world, *let us strive to live a meaningful life as we work towards our goals and aspirations in this new normal, just as we did, just as we have always done and will always do*. PB

Sailing Unprepared into a Storm Called the 'Digital Age'

Anikethan Ramakrishna V

A CURSORY READING of history tells us that change has been a constant companion of human civilisation. In a greater part of history, the rate and quantum of change that any single generation of people had to experience in their lifetime were minimal. Thus, people individually or collectively could give themselves an identity and principles or ideals to be lived up to and find meaning in life in the pursuit of these principles and ideals. For example, a hunter-gatherer in pre-historic times would remain a hunter-gatherer throughout his life. The transition from a hunter-gatherer society to a farming society was a gradual transition of hundreds or a few thousand years, thereby providing humans enough time to reorient themselves both at the level of an individual and the level of society, for the changed circumstances.

Similarly, a teacher, scientist, artisan, priest, and the like at most stages in history could be reasonably sure of society and the ideals that it was based on, remaining the same throughout their lifetime. Over time with human civilisation making its transition into the industrial revolution, the pace of change increased. But drastic changes were mostly 'once a generation', thus giving people the necessary time to eventually reorient themselves.

The digital age has been a revolution like no other in human history. Things that would have been considered possible only in the realm of

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IMAGE: JOHN M LUND <HTTPS://WWW.GETTYIMAGES.IN>

science fiction a couple of decades ago are now either already a reality or are tending towards becoming one. Every dimension of human society is now in a constant state of churn. Ideas and their practices that looked fresh and relevant yesterday are constantly challenged and seem to become irrelevant and outdated today, thus needing constant re-evaluation as individuals and as a society.

Our ability to find meaning in life, as mentioned previously, to a great extent depends on our ability to have a reasonably stable set of principles, ideas which we can work towards and an identity to which we can relate to. But today's pervasive digital world, characterised by abundant and many a time unreliable and irrelevant information, is a challenge to an individual in his or her quest for identity and meaning. This is especially true since most of us cannot separate the grain from the chaff and hence get easily influenced and carried away by this overload of information. In the following sections, we look at some of the common challenges that we as individuals face in integrating the right amount of digital presence and information and possible pointers that might enable us to do the same.

The 'Societal' and 'Individual' Perspective

Every significant change in society has two levels of impact. One is at the overall societal level and the other is at the individual level. The human tendency has always been to go with the group. Research after research, including through group experiments, has shown that individuals tend to go with the choice and opinion of the majority around, despite having an exact opposite point of view, to begin with. In the process, we tend to forget the freedom of choice that we have, as individuals. *This freedom of choice and our ability to exercise it, in many a case, is the difference between a meaningful life and one that is otherwise.*

Specifically, in the context of the digital world, society, in general, has embraced it and will continue to further build on it. But as individuals, each of us needs to be more selective in choosing the digital aspects and the extent to which we integrate and internalise them in our individual lives. It is essential that we use digital technology as a '*tool*' rather than let digital technology '*use us*' as a tool. Thus, the first step towards ensuring a meaningful living in this digital age is through exercising the 'choice' to participate in the digital world to the extent that is necessary and optimal for us individually.

The Challenge of 'How Much To' and 'How to' Communicate and Participate

The human being is known to be a social being. Being part of a community and building healthy relationships with fellow beings has always been an essential part of a meaningful life. Historically, owing to the constraints that geography and technology imposed, a person's interactions on a regular basis were mostly limited to the people he or she could meet in person, or the ones that could be reached via mail services (from the pigeon to the post). A more in-person interaction or a more purposeful and measured mail communication mostly led to stronger and long-lasting social ties and relationships and a stronger sense of community overall. But the digital world and the seamless communications that it offers, for all its benefits, also brings with it the *trivialisation of inter-personal communication*. The sudden surge in the number of people one gets to interact with, and the constant interleaving of conversations that happens, correspondingly reduces the quality of individual communications. The ease of communication also mostly leads to

purposeless communication. The overall result in most cases is that though one communicates more, most of it is impersonal and detached, consequently leading to a sense of unfulfilled social interactions and loneliness.

This is an everyday challenge that most of us face and one that needs to be dealt with. Reducing social media presence is generally a good place to begin. Subsequently, setting aside a 'digital-device-free time' every day and using that time for more quality in-person interactions or general reading and contemplation, would be more enriching and meaningful. Overall one needs to ensure the quality of social relationships and interactions with a smaller group of people that matter, even as one increases reach on one's social network. The latter cannot be at the expense of the former.

The Challenge of 'What to' and 'What Not to' be Influenced by

The interconnectedness of the digital world translates to information from across the world being readily available for consumption. This means that the distinction between relevance and irrelevance, information and misinformation gets blurred. While easy access to information from across the world is a great enabler, our inability to sort it by relevance and treat each of it differently—many a time unknowingly—turns it into a disability for us. A more unhealthy aspect of this information access is when, without much contemplation, we let it influence our ideas and actions, especially when it comes from a well-known public figure. This constant flow of information and our thirst to consume more and more of it implies that we have very little time to give to each of them. Consequently, the ability to *critically dwell* on an idea, *internalise* it if relevant, and then if necessary *act* on it, gets lost. Wanting to quickly consume something and move on has become a trait and it manifests in every aspect of personal and social life these days. *Attention deficit* and *satisfaction deficit* are prominent today.

The first and meaningful step to handling this is to start treating *individually and differently* every piece of information that we receive. The irrelevant ones need to be ignored and filtered out. What is possibly good-to-know, needs to be given just the amount of time and attention that it demands. That which matters and is relevant needs to be contemplated upon and internalised. This ensures that we give time to and understand better the things and ideas that matter to us, those that are at the core of our life and personality. Thereby, we are not easily swayed with the deluge of information, and this overall translates to a more stable outlook and life in general.

Conclusion

Technological change and its frequent churn in society is a fact for the foreseeable future. A lot of it is focused on creating new wants and providing means to satisfy them. As the number of wants and our capacity for consumption increases, so also does our vulnerability to be affected by the lack of means to satisfy our wants. Every such want starts with our exposure to a new idea or information. Like it was once said that 'The Sun never sets on the British empire', it can now be said that 'The Sun never sets on the exposure to information in the digital empire'. This is true as a society. But as individuals, we have the choice of the extent and type of information we want to expose ourselves to and how we want to act on it. Leveraging this choice is the only means to ensure that we make life on a daily basis and overall, *meaningful*.

REPORTS

Headquarters

Srimat Swami Smarananandaji Maharaj, President, Ramakrishna Math and Ramakrishna Mission, inaugurated Swami **Niranjanananda Bhavan** and Swami **Subodhananda Bhavan** (quarantine houses for monks and staff respectively) at Belur Math on 18 November, the birthday of Swami Vijnanananandaji Maharaj.

Ms Eleonora Dimitrova, Ambassador of Bulgaria to India, visited Belur Math on 21 November.

New Centre

Following the taking over of Somsar Sri Ramakrishna Seva Mandir by the Ramakrishna Mission, a new branch centre of the Mission has been started there. Srimat Swami Gautamanandaji Maharaj, Vice-President, Ramakrishna Math and Ramakrishna Mission and Adhyaksha, Ramakrishna Math, Chennai, attended the handing over ceremony on 18 November, the birthday of Swami Vijnanananandaji Maharaj. He also inaugurated a guesthouse at the centre on the same day. The Seva Mandir was founded in 1996. The address of the new centre is '**Ramakrishna Mission**, Village and P.O. **Somsar**, via Khandaghosh, Dist. Bankura, West Bengal 713142', phone numbers: 7044536630 and 97320 77647 and email id: <somsar@rkmm.org>.

News of Branch Centres in India

Ramakrishna Math, Jamtara concluded its centenary celebration with a public meeting and other programmes on 31 October and 1 November.

Sri Basavaraj Bommai, Chief Minister of Karnataka, presented *Amrita Mahotsava State Award* to **Ramakrishna Math and Ramakrishna Mission, Mangaluru** at a function in Bengaluru on 1 November in recognition of the centre's service activities and its leading role in Swachchha Bharat Abhiyan (Clean India Campaign) in Mangaluru city. The award consisted of a citation, a gold medal, and a cash prize of one lakh rupees.

Ramakrishna Mission, Somsar

Smt. Anusuiya Uikey, Governor of Chhattisgarh, bestowed *Yati Yatanlal Samman* on **Ramakrishna Mission Ashrama, Narainpur** for promoting non-violence and cow protection. The centre received a citation, a memento, and a cash prize of two lakh rupees in the award ceremony held in Raipur on 1 November, attended by Sri Bhupesh Baghel, Chief Minister of Chhattisgarh, and others.

On 10 November, **Narainpur** centre dedicated the new living quarters for the medical staff of the centre's mobile medical service in Rowghat of Chhattisgarh, a project launched in collaboration with Bhilai Steel Plant. A girl student of our **Narainpur** school secured the 338th rank in this year's qualifying exam for admission to the Indian Institute of Technologies (IITs). She is the first student of our Narainpur school to achieve this feat.

Sri Biplab Kumar Deb, Chief Minister of Tripura, inaugurated the renovated dispensary building at **Ramakrishna Math and Ramakrishna Mission, Viveknagar, Agartala,** on 10 November.

Inauguration of the Third Floor of Nivedita Nurses Hostel at Vrindaban Sevashrama

Revered Swami Gautamanandaji consecrated the new portraits of the Holy Mother Sri Sarada Devi and Swami Vivekananda, now installed on ornamental seats, in the temple at **Ramakrishna Math, Gourhati** on 15 November.

At **Ramakrishna Math and Ramakrishna Mission Sevashrama, Vrindaban,** Swami Gurusharananandaji of Karshni Ashram, Gokul, inaugurated the General Ward (for men) on 16 November, and Revered Swami Gautamanandaji inaugurated the third floor of the nurses' hostel on 26 November.

Ramakrishna Mission Ashrama, Manasadwip inaugurated a two-storey building on 18 November. The building has a few rooms for office and monks' residence.

Sri Sathya Sai University for Human Excellence, Karnataka, presented *Sathya Sai Award for Human Excellence* to **Ramakrishna Math and Ramakrishna Mission, Mumbai** in recognition of its contribution to social welfare. In the award ceremony held at Muddenahalli near Bengaluru on 23 November, the centre received a medal, a citation, and a cash prize of five lakh rupees.

The Tourism Department, Government of Rajasthan, has designated the Ajit-Vivek Museum at **Ramakrishna Mission Vivekananda Smriti Mandir, Khetri** as an 'Iconic Monument and Heritage Tourist Destination' in Rajasthan.

A team of five students of class 8 of **Ramakrishna Mission, Aalo** school secured the seventh position in the state level National Children's Science Congress (NCSC) held at Itanagar on 12 November. Their project 'Aqua-terrace—An integrated project for hilly areas' qualified for the national-level NCSC to be held from 27 to 31 December.

On 18 November, **Ramakrishna Advaita Ashrama, Kalady** felicitated Sri M K Kunjhol, a former resident of the Ashrama hostel, on being awarded *Padma Shri* from the Government of India for his social work among backward classes.

Ramakrishna Mission Sevashrama, Silchar, as part of its plan to build a new temple of Sri Ramakrishna, shifted its temple services from the old temple to another building on 12 November. The foundation stone for the new temple was laid on 13 November.

Sarada Nursery School run by the **Ramakrishna Mission Ashrama, Batticaloa** (a sub-centre of Ramakrishna Mission, Colombo) held a function on 17 November to mark its golden jubilee.

One of our teachers at Sarada Kindergarten of **Ramakrishna Mission, Singapore** received the *Leading Foundation Teacher Award* in the Early Childhood Educator category at the National Institute of Education in Nanyang Technological University, Singapore, on 24 November.

Values Education and Youth Programmes

Ramakrishna Math, Thrissur conducted cultural competitions for higher secondary and college students in which more than 500 students from all over Kerala participated. The winners were awarded prizes on 11 September.

Medical Camps

The following centres provided medical care to poor patients. A summary of the services provided by them are as follows: **Asansol**: A medical camp at Alladi village in Paschim Bardhaman district on 28 November in which 300 patients were treated. **Bankura**: 356 eye patients were screened, 77 were operated on, and 45 were given spectacles from 28 October to 27 November. **Bhubaneswar**: A camp on 28 November in which artificial limbs were given to 106 physically challenged persons. **Cooch Behar**: (i) A cleft-lip and cleft-palate camp on 25 September in which 79 patients were examined, and (ii) A general medical camp on 1 November in which 33 patients were treated. **Darjeeling**: Four medical camps in November in which a total of 333 patients were treated. **Hatamuniguda**: An eye camp on 14 and 15 September in which 275 persons were screened and 54 were given spectacles. **Kamarpukur**: 332 eye patients were treated, 117 were operated on, and 66 were given spectacles in November. **Khetri**: Two eye camps on 24 October and 28 November: 222 patients were treated and subsequently 85 were operated on. **Lucknow**: 6,358 eye patients were treated, and 373 were operated on and given spectacles in November. **Madurai**: Two eye camps on 17 October and 21 November: 288 patients were screened and subsequently 43 were operated on and given spectacles. **Manasadwip**: Cataract surgeries for 39 patients on 10 November, in association with another organisation. **Mumbai**: An eye camp at Khidki village of Alibag taluka in Raigad district, Maharashtra, on 31 October: 197 patients were treated; subsequently, 41 surgeries were performed and 80 spectacles were distributed. **Nabadwip**: An Ayurvedic medical camp on 28 November in which 150 patients were treated. **Nagpur**: An eye camp at Mahalgaon village in Nagpur district on 31 October:

Free Medical Camp by Asansol Centre

204 patients were treated; subsequently, 28 surgeries were performed and 109 spectacles were distributed. **Naora**: An eye camp on 28 October in which 10 patients were treated. **Porbandar**: An eye camp on 12 November: 37 patients were treated and subsequently 14 were operated on for cataract. **Salem**: An eye camp on 14 November: 190 patients were treated; subsequently, 36 surgeries were performed and 39 spectacles were distributed. **Viveknagar, Agartala**: A blood donation camp on 10 November which was inaugurated by Sri Biplab Kumar Deb, Chief Minister of Tripura. A total of 35 persons donated blood. **Visakhapatnam**: Two camps in Vizianagaram district on 28 November: (i) 24 eye patients were treated and subsequently 3 eye operations were performed, and (ii) 76 general patients were treated.

Relief

1. ***Flood Relief***: As some parts of Andhra Pradesh, Kerala, Tamil Nadu, and West Bengal received heavy rainfall in November resulting in floods, the following centres carried out relief operations, details of which are as follows: (i) **Andhra Pradesh**: **Tirupati** centre served food to 770 people in Tirupati from 19 to 22 November. (ii) **Kerala**: **Pala** centre distributed 200 kg

Flood Relief by Chennai Math

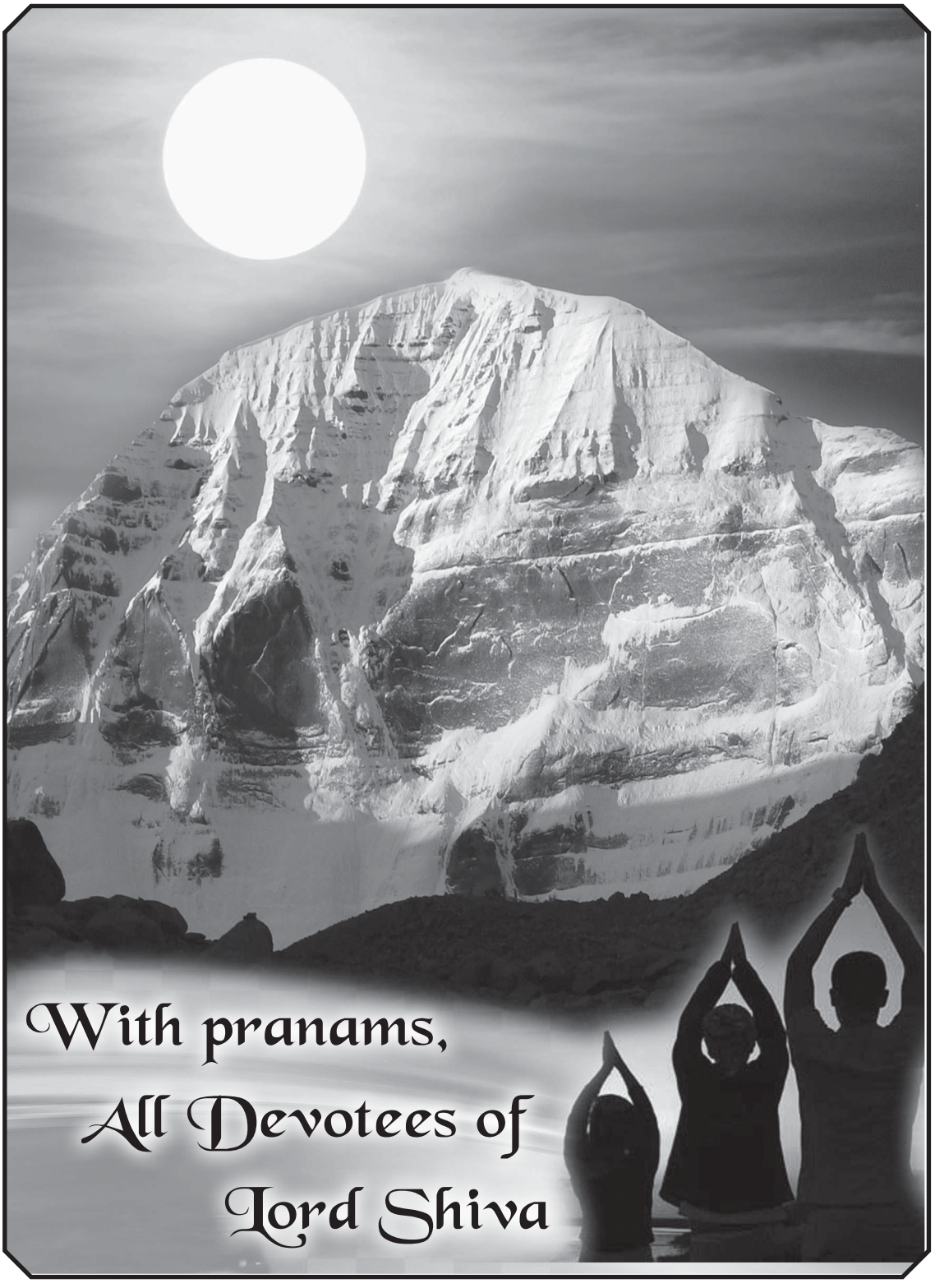
wheat flour, 200 kg green gram, 100 litres cooking oil, 60 kg assorted spices, 200 kg sugar, 50 kg tea powder, 200 umbrellas, 200 ladies' garments, 200 dhotis, 200 lungis, 400 towels, 200 bed sheets, 200 saris, and 200 sets of utensils (each set containing a rice pot, 2 plates, 1 mug, 3 ladles, and 2 tumblers) among 200 families in Pathanamthitta and Kottayam districts on 14 and 15 November. (iii) **Tamil Nadu**: (a) **Chennai Math** served food to 2,900 people, and distributed 615 kg rice, 158 kg pulses, 83 litres cooking oil, 85 kg assorted spices, 40 kg salt, 75 kg sugar, 115 tarpaulins, 275 bed sheets, and 275 towels among 270 families in Chennai and Thiruvallur districts from 11 to 20 November. (b) **Chennai Students' Home** served food to 417 persons, and distributed 3,826 food packets and 2,513 loaves of bread in Chennai and Thiruvallur districts from 11 to 14 November. (c) **Kanchipuram** centre distributed 80 blankets among tribal people in Kanchipuram district in November. (d) **Malliankaranai** centre served 2,962 plates of food in Kanchipuram district from 8 to 12 November. (e) **Thanjavur** centre distributed 150 kg rice, 100 kg wheat flour, 100 kg pulses, 50 kg rava (semolina), 50 kg salt, 25 litres cooking oil, 10 kg sambar powder, 45 kg assorted spices, 100 kg sugar, 50 kg jaggery, 25 kg garlic, 100 kg onions, 50 sanitary pads, 250 masks, 200 bars of bathing soap, 50 bars of detergent, and 50 bars of dish-washing soap among 50 families in Thanjavur district on 21 November. The centre also distributed 30 umbrellas among as many children of an orphanage in Thanjavur on 19 November. (iv) **West Bengal**: **Tamluk** centre distributed 2,000 kg muri (puffed rice), 1,000 kg fried chira (rice flakes), 1,000 kg chanachur (a snack mix), and 4,000 packets of biscuits among 2,000 families in Purba Medinipur district on 18 November.

2. ***Covid-19 Relief***: **India**: (i) **Maharashtra**: Mumbai Corporation is running a free vaccination centre at **Mumbai** centre; 5,360 doses were administered between 28 October and 25 November. (ii) **Uttar Pradesh**: **Varanasi Home of Service** is running a free vaccination centre in which 378 persons received vaccination from 1 to 6 November. **South Africa**: **Phoenix** centre, along with its sub-centre in Johannesburg, distributed 1,862 kg rice, 600 kg maize meal, 100 kg cereals, 40 kg wheat flour, 1,260 kg pulses, 850 kg potatoes, 850 kg onions, 65 kg noodles, 100 kg assorted spices, 250 kg salt, 1,000 litres cooking oil, 600 cans of tinned food, 40 kg soup powder, 25,000 tea bags, 250 litres milk, 265 kg sugar, 3,304 breakfast cereal sachets, 685 packets of biscuits, 200 tubes of toothpaste, 500 matchboxes, 500 bars of soap, 480 adult napkins, and 5 wheelchairs among 250 families in November. The centre also provided a litre of milk and a loaf of bread each to 22 families thrice a week, and LP gas cylinders to 14 families. The centre gave a sewing machine to a speech and hearing impaired person and provided medical service to people. **Sri Lanka**: **Batticaloa** sub-centre of the Colombo branch distributed 1,650 kg rice, 990 kg flour, 330 kg pulses, 66 kg soya chunks, 330 kg sugar, and 66 kg nutrient powder among 330 families in Batticaloa district on 7 November.

3. ***Disturbance Relief***: **Bangladesh**: Following the incidents of rioting and arson in October, in which angry mobs targeted a minority community, three of our centres continued relief operations. Details are as follows: (a) **Chandpur** centre distributed 2 rickshaw vans and 21 fishing nets in Rangpur district on 30 October. (b) **Dinajpur** centre distributed 85 winter garments in Rangpur district on 6 November. (c) **Rangpur** centre distributed 100 blankets in Rangpur district on 13 November.

4. ***Winter Relief***: The following centres distributed blankets and winter garments, shown against their names, to needy people: **India**: (a) **Bagda**: 665 blankets from 10 to 25 November. (b) **Cossipore**: 500 blankets from 27 October to 10 November. (c) **Darjeeling**: 225 blankets from 1 October to 25 November. (d) **Deoghar**: 400 blankets from 20 to 24 November. (e) **Guwahati**: 500 blankets from 14 to 28 November. (f) **Hatamuniguda**: 300 blankets on 24 November. (g) **Indore**: 800 blankets on 14 November. (h) **Jhargram**: 120 blankets on 21 November. (i) **Manasadwip**: 1,000 blankets from 8 to 14 November. (j) **Medinipur**: 500 blankets from 17 October to 15 November. **Bangladesh**: **Bagerhat**: 76 blankets on 26 November.

5. ***Distress Relief***: The following centres distributed the items shown against their names to needy people: **India**: (a) **Balaram Mandir**: 200 packets of biscuits, 60 kg wheat flour, and 551 saris from 6 to 31 October. (b) **Baranagar Mission**: 500 saris, 500 lungis, 195 shirts, 195 trousers, and 84 ladies' garments from 2 to 10 October. (c) **Darjeeling**: 700 kg rice, 50 kg semolina, 100 kg pulses, 100 kg soya chunks, 7 kg noodles, 100 litres cooking oil, 100 kg salt, 76 kg assorted spices, 100 kg sugar, 286 packets of biscuits, 100 bars of bathing soap, 100 bars of detergent, and 100 bars of dish-washing soap from 28 October to 21 November. (d) **Guwahati**: 170 saris on 21 November. (e) **Hatamuniguda**: 709 saris, 709 lungis, 195 bed sheets, and 65 shirts from 7 to 23 November. (f) **Headquarters** (through Baganchra Ashrama): 460 saris, 220 lungis, 150 dhotis, and 430 tubes of toothpaste in October. (g) **Indore**: 350 saris on 14 November. (h) **Jamtara**: 25 bags, 25 notebooks, 25 pens, 100 water vessels, and 100 food packets on 31 October. (i) **Jayrambati**: 200 kg pulses, 100 litres cooking oil, 30 kg assorted spices, 100 bottles of hair oil, 100 bars of bathing soap, 100 bars of washing soap, 100 kg detergent powder, 100 saris, 100 napkins, and 100 face masks on 20 November. (j) **Koyilandy**: 20 children's garments on 4 November. (k) **Medinipur**: 500 saris, 500 lungis, and 500 mosquito nets from 17 October to 15 November. (l) **Mekhliganj**: 500 saris and 500 lungis from 16 September to 5 November. (m) **Nagpur**: 1,058 school uniforms, 1,058 pens, and 3,174 notebooks from 9 to 27 October. (n) **Naora**: 200 saris and 50 dhotis on 12 October. (o) **Puri Mission**: 255 saris and 400 lungis from 5 to 27 November. (p) **Salem**: 78 saris, 80 lungis, 166 towels, 80 shirts, 156 ladies' garments, 8 sets of children's garments, 8 bottles of hair oil, 8 tubes of toothpaste, 8 toothbrushes, 16 bars of bathing soap, and 4 kg detergent powder on 23 and 24 October. (q) **Sarisha**: 550 saris, 20 dhotis, and 120 assorted garments from 2 to 9 October. (r) **Silchar**: 2,400 saris, 300 dhotis, and 100 mosquito nets in September and October. (s) **Sinthi** (Beni Pal Udyan), Kolkata: 95 kg rice, 39 kg potatoes, 9 kg pulses, 9 kg gram, 7 litres cooking oil, 7 kg salt, and 87 saris from 1 to 31 October. (t) **Vrindaban**: 1,125 kg rice, 1,125 kg wheat flour, 225 kg pulses, 225 litres cooking oil, 225 kg salt, 225 apples, 113 kg sugar, 45 kg milk powder, 23 kg tea leaves, 225 bottles of hair oil, and 225 bars of bathing soap on 13 November. **Bangladesh**: (a) **Chandpur**: 325 saris from 12 to 16 October. (b) **Dhaka**: 260 saris on 7 October. PB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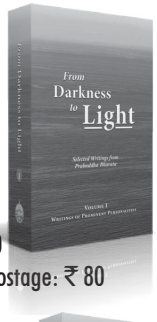

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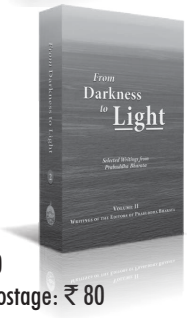

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Prabuddha Bharata, the monthly journal of the Ramakrishna Order, was started by Swami Vivekananda in July 1896. In 2021, as it celebrated its 125th anniversary, we are greatly delighted to present to our readers this two-volume commemorative work titled *From Darkness to Light*. Both the volumes are compilations of select articles published in the *Prabuddha Bharata* during the last 125 years.

Swami Vivekananda wanted the eternal message of Hindu Sanatana Dharma to be spread through this journal all over the world. For the last 125 years *Prabuddha Bharata* has been commendably doing this work and has been successful in impacting the minds of people everywhere.

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Compiled & Edited by
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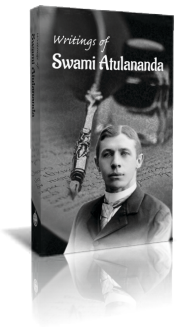

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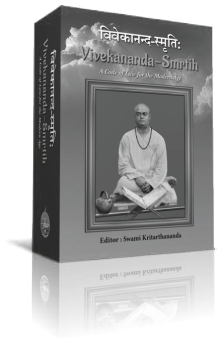

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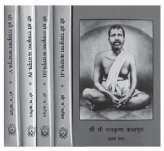

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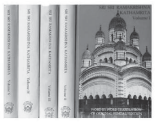

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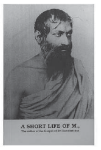

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Renunciation

Swami Vireswarananda
(Tenth President, Ramakrishna Math & Ramakrishna Mission)

Three things are difficult to get in this world -human birth, desire to realise God and association with a great soul. Now, we are all born as human beings and also have the desire to realise God. Those who stay far away and are unable to associate with a great soul, or cannot come in close contact with him, they also will get the association of the holy ones if they read the Gospel of Sri Ramakrishna with sincerity and steadfastness. If you read the conversation of Sri Ramakrishna, meditate on it and imagine as if you are in Dakshineswar with Sri Ramakrishna listening to his words with rapt attention that itself becomes an association with the holy man. Raja Maharaj told us, "I am giving you the religious knowledge in one word- read the Gospel everyday. If you can do that, your your mind will always be completely free from worldly attachment. Troubles and attachment will go away gradually from the mind. Then there will be an intense desire to realise God".

Religion cannot be practiced without renunciation. Sri Ramakrishna said that renunciation is the only way. What is there in the Gita ? Only words of renunciation and nothing other than that. Holy Mother said, "In the life of Sri Ramakrishna, renunciation is the main teaching. This kind of renunciation was never seen in any of the past incarnations". What we now observe in the world is the lack of this spirit of renunciation. There is selfishness everywhere - either at the national level, or international level or social level or family level. Wherever you go, this selfishness has become the main trait. We have to remember that the idea of Sri Ramakrishna's life is renunciation. If we can hold on to this ideal then everything will be alright.

(Swani Vireswarananda: *A Divine Life*, Volume 2, Second Revised Edition, 2015, Swami Vireswarananda Smriti Committee, Belur Math, page 409)

In reverential homage :
Bani, Bhaskar, Debasree, Devajit, Ruchira & Aahir
(Chittaranjan Park, New Delhi)

Dear Ma,

Thank you for wonderful Darshan.

With loving pranams,

Ferdos, Valerie, Nahid and Tamara
Trabuco Canyon, USA

"Shri Ramakrishna was a wonderful gardener. Therefore he has made a bouquet of different flowers and formed his Order. All different types and ideas have come into it, and many more will come. Know each of those who are here to be of great spiritual power. Because they remain shrivelled before me, do not think them to be ordinary souls. When they will go out, they will be the cause of the awakening of spirituality in people. Know them to be part of the spiritual body of Shri Ramakrishna, who was the embodiment of infinite religious ideas. You may go round the world, but it is doubtful if you will find men of such spirituality and faith in God like them. They are each a centre of religious power, and in time that power will manifest."

Swami Vivekananda [referring to his brother disciples]

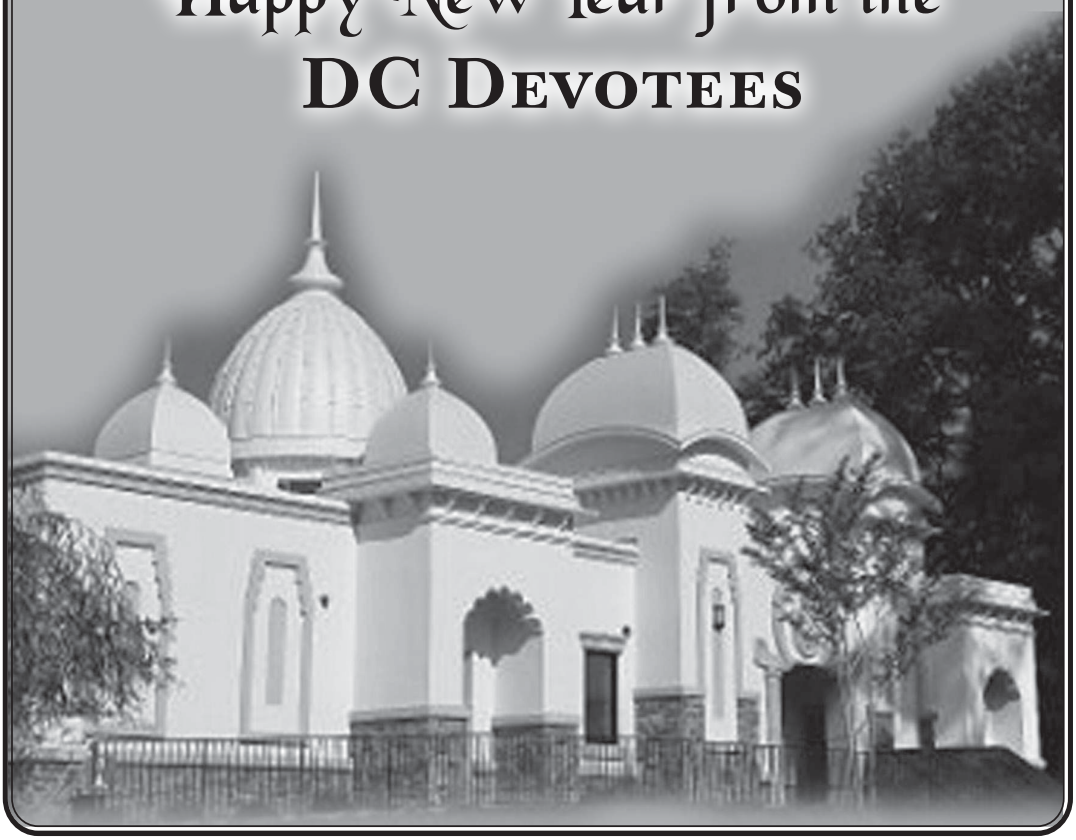
With loving pranams from your Dedicated Servants.

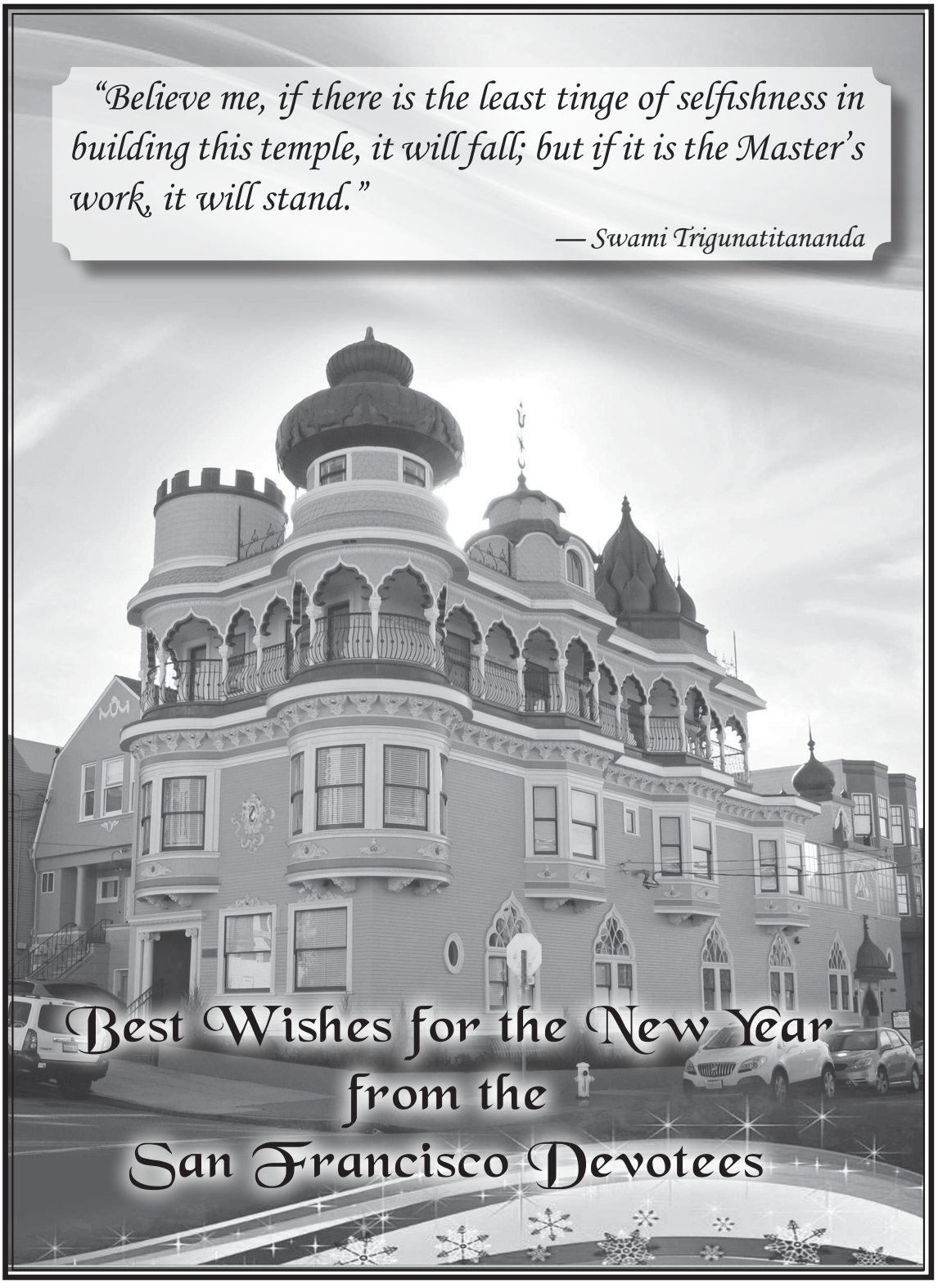
—Singapore Devotees

Who is the Best devotee of God? It is he who sees, after the realization of Brahman that God alone has become all living beings, the universe, and the twenty-four cosmic principles.

—Sri Ramakrishna

Happy New Year from the DC Devotees




"Believe me, if there is the least tinge of selfishness in building this temple, it will fall; but if it is the Master's work, it will stand."
— Swami Trigunatitananda
Best Wishes for the New Year
from the
San Francisco Devotees

"Do not fear, my child. Always remember that the Master is behind you. I am also with you. As long as you remember me, your mother, why you should be frightened? The Master said to me, 'In the end I shall certainly liberate those who come to you.' "

—Holy Mother Sri Sarada Devi

Swami Prabuddhananda
(1929—2014)

—Devotees of Northern California

Unselfishness is more paying,

only people have not the

patience to practise it.

—*Swami Vivekananda*—

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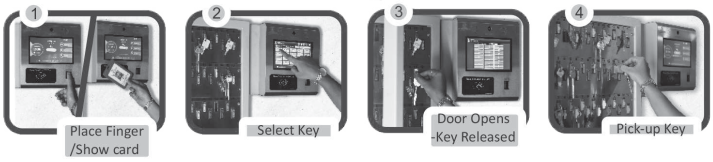

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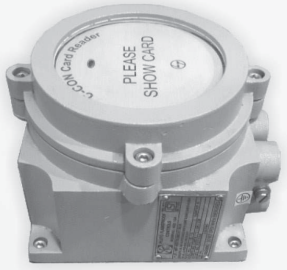

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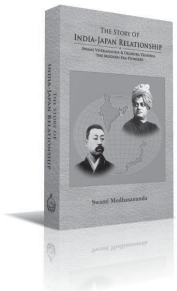

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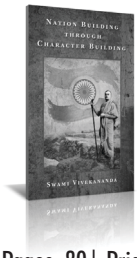

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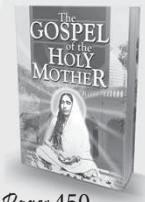

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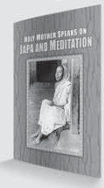

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May Sri Ramakrishna, Maa Sarada, Swami Vivekananda and Donyi-Polo bless us all to serve humanity.

Yours in the Lord,
Swami Yogishwarananda
Secretary

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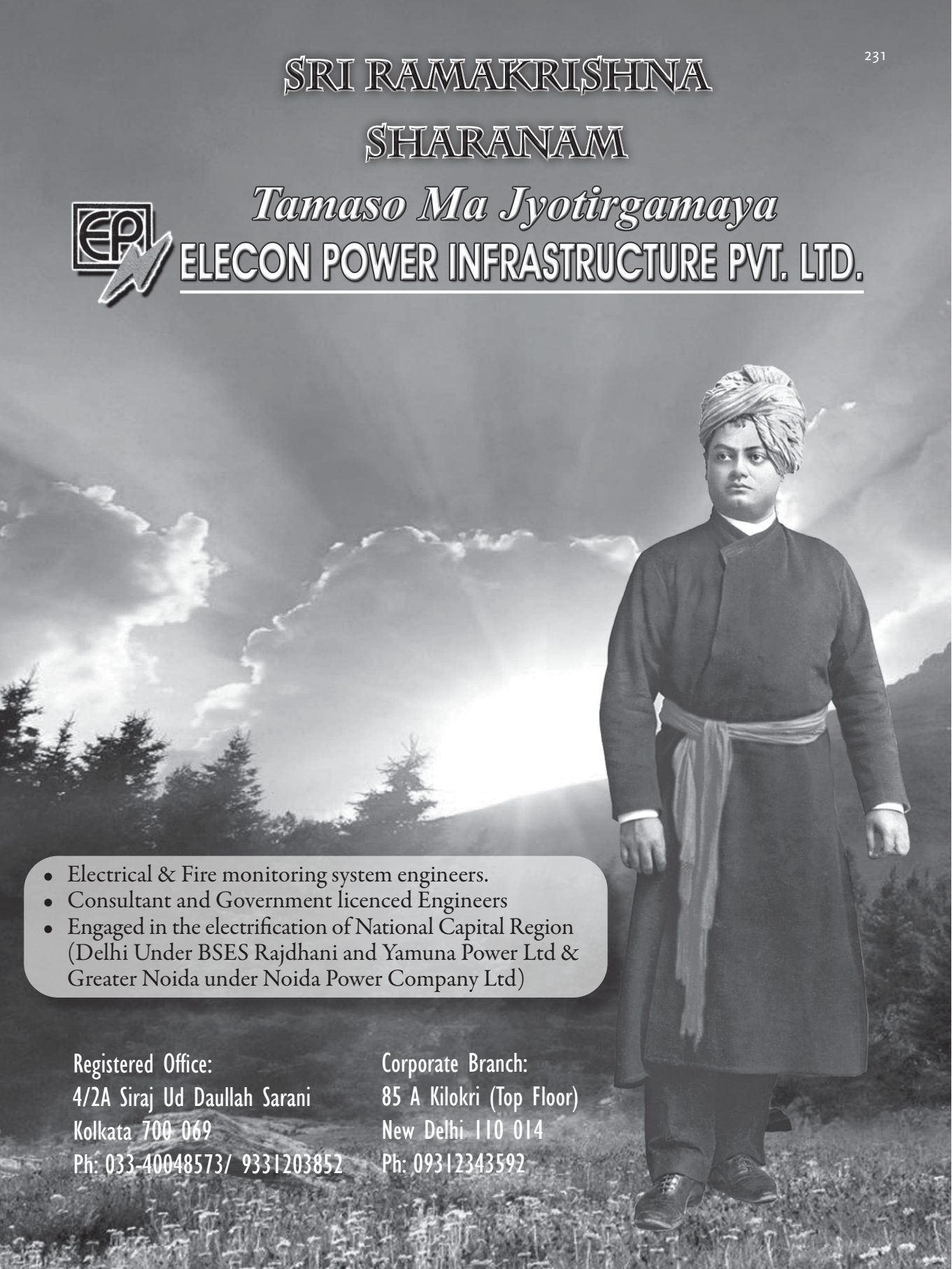

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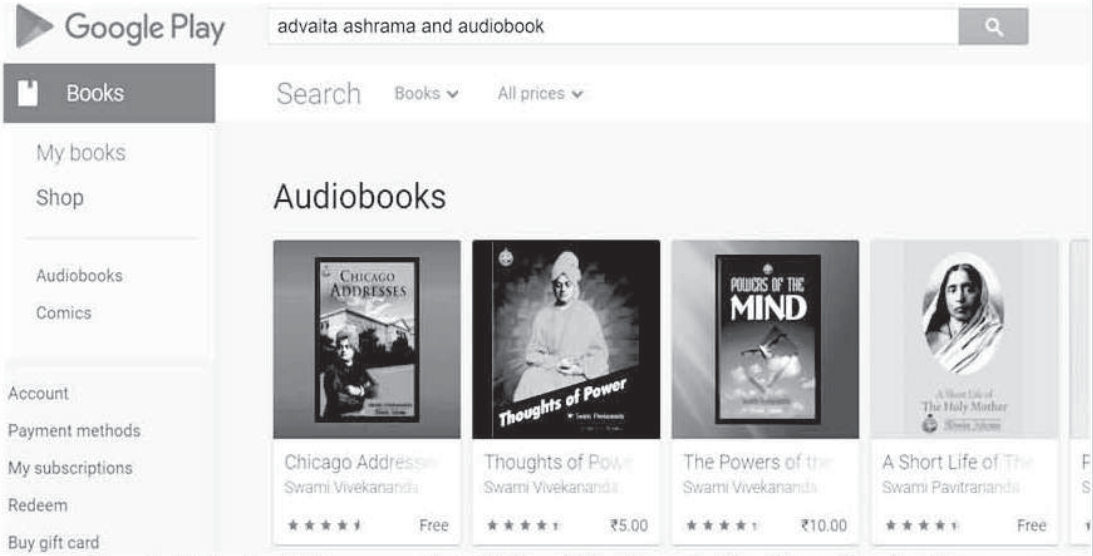

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